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Serving methods and dining environment currently used in successful high school child nutrition programs in Georgia

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Serving methods and dining environment currently used in successful high school child nutrition programs in Georgia

by

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ABSTRACT

In-depth case studies, observing actual practice of service methods, service designs, and cafeteria design and décor in Child Nutrition Programs (CNPs) were conducted in five successful Georgia high schools. Successful high school CNPs were defined as programs with lunch participation greater that 60% combined with a fund balance sufficient to cover 2 months' operating cost and less than 50% of the students qualifying for free and reduced-price meals. The schools were identified as successful by the Georgia Department of Education Child Nutrition Division. Interviews with managers and directors, historical records, and on-site observations were utilized to seek data.

Results suggested that dining room décor did not appear to be a factor in making the schools successful. With the exception of the two recently built schools, dining décor was basic. All schools had sufficient seats to accommodate all students during each lunch period. Although dining rooms were crowded, a few empty seats were always available.

All five high schools had an automated point-of-sale system and directors and managers used related software to assist in materials management, production forecasting and scheduling, service, and monitoring performance. All directors had made changes to decrease the amount of time students waited in line including offering additional service lines and using remote serving lines throughout the dining area to provide many access points.

All schools offered multiple (5 to 21) entrée choices and several side items daily. Entrées were served to students, however, all other items were self-serve. Managers and directors were proud of the quality of the food served. All five schools prepared hot foods close to service time and continuously during service time to minimize holding. All used a

wide variety of resources to solicit input from their students: surveys, taste testing, informal discussion, point of sale reports, and informal cafeteria rounds.

CHAPTER 1.

INTRODUCTION

A variety of serving methods and dining room environments are used in Child Nutrition Program (CNP) high school operations, yet currently little information is available on the cost effectiveness of and customer satisfaction with these serving methods and dining room environments. As a result, CNP directors are challenged to make knowledgeable decisions when selecting new food delivery/service systems.

The National Food Service Management Institute's (NFSMI) Applied Research Division updated the research plan for NFSMI in June of 2003. Two areas of research identified as important for CNPs were: (a) the relationship between financial stability and customer satisfaction, and (b) the style of service (Meyer, 2003).

No studies were found that examined the area of primary interest for this study—style of service and dining room décor as it relates to participation and financially successful CNPs. Most studies of serving systems have concentrated on the amount of time it takes to serve individuals. Because of this, little is known about service systems and dining room ambience and their relationship to participation and customer satisfaction.

Schools offering the National School Lunch Program (NSLP) from its inception in 1947 until the 1980s typically used a straight-line service system. The dining area was often institutional-looking with long rows of tables, limited color, and limited décor (Pannell-Martin, 1999). Today fewer foodservice operations serve cafeteria style. Self-service for vegetables, as well as salad bars, is being used in schools, and many have food courts and window-type service particularly in high schools (Buzalka, 2003; Ghiselli, 2001; McConnell, Matta, & Shaw, 1997; Meiselman, Johnson, Reeve, & Crouch, 2000).

Increasing participation in CNPs has an important impact on the social and educational atmosphere of a school. Numerous studies explain the importance of proper nutrition and the role it plays in the learning and achievement of children (Centers for Disease Control and Prevention, 1996; Pollitt & Mathews, 1998; Sallis et al., 1999; Symons, Cinelli, James, & Groff, 1997; Taras, 2005). Research findings indicate that a positive correlation exists between healthy eating habits and high achievement in students.

The field of child nutrition has and will continue to experience many changes. Trade journals have highlighted a number of CNP directors who have significantly increased participation after making changes in serving systems and in cafeteria décor (Beasley, 1993, 1995; Bond, 2000; Buchthal, 2006).

Research Questions

The purpose of this research was to provide CNP directors with information to make knowledgeable decisions when selecting new food delivery/service systems or planning dining room renovations by addressing the following questions:

1. What methods of service are used in successful high school CNPs?
2. What are characteristics of the dining room ambiance and décor in successful high school CNPs?
3. What are the commonalities and differences in service and dining room ambiance in successful high school CNPs?
4. What are the service policies and practices in successful high school CNPs?

To address these questions, this research used a multi-method case study approach that combines structured interviews, observations, and documentation records to collect, analyze, and interpret data in five Georgia high schools that operate successful CNPs.

Researchers using a case-study design identified the variables that are important to the outcome of a particular situation (Monsen & Cheney, 2003). This form of research allows an in-depth study of service methods, service designs, and cafeteria design and décor in a natural setting and observing actual practice. The case method allows the questions of why, what, and how to be answered with a relatively full understanding of the nature and complexity of the complete phenomenon. In this research the serving methods and cafeteria décors of several successful schools were studied. The data collected were used to develop an overall understanding of service methods and dining room environments in successful high schools and to contribute to the body of knowledge by providing information to CNP directors to use when making decisions on selecting new service methods and/or building or remodeling dining rooms.

Definitions of Terms

The following terms represent operational definitions specific to this research:

Customer satisfaction: Positive, neutral, or negative feelings about the value received from a product (Spears & Gregoire, 2006).

Cafeteria environment/ambiance: The surroundings and atmosphere of the dining room including noise level; lighting; décor; seating types and arrangements (Sanchez & Contreras, 2003); colors; temperatures and relative humidity; odors; furnishings including floor and wall coverings and drapes; the appearance and dress of employees; and sanitation (Bratianu & Terry, 1999; Pannell-Martin, 1999).

Service methods or designs:

Cafeteria style: Employees serve the food onto trays or plates as the students move in front of the serving line (Pannell-Martin, 1999; Spears & Gregoire, 2006).

Food court style: Customers are served their meals at one of several counters, then carry the meal to the common dining area—similar to ordering at a fast food restaurant (Pannell-Martin, 1999).

Scramble style: a variation of cafeteria style where several separate stations are serving different foods. Students go from one station to another making their selections and then exit by a cashier (Pannell-Martin, 1999).

Self-service bars: food is offered buffet style with students serving themselves (Pannell-Martin, 1999). This method enables a facility to serve more people in a given time with fewer employees (Spears & Gregoire, 2006).

Successful high school CNP: the program's lunch participation is greater than 64% combined with a fund balance sufficient to cover two months' operating cost.

CHAPTER 2.

REVIEW OF LITERATURE

Child Nutrition Program Participation

CNP personnel have worked for years to maximize participation of children in the meal programs and to provide foods students will eat while meeting federal guidelines. The focus of CNPs has shifted from providing a feeding program to competing with the food industry to make programs more attractive to students (Snyder, Lytle, Pellegrino, Anderson, & Selk, 1995). Traditionally, percentage of participation combined with a positive financial position has been used to measure success in CNPs, and much is found in the literature about variables influencing participation ("FL Schools," 2001; Gleason, 1995; Hackes & Shanklin, 1999; Meyer, 2005; Meyer & Conklin, 1998; Sanchez & Contreras, 2003). Customer satisfaction is one factor that has been found to contribute to increased participation (Conklin, Lambert, & Anderson, 2002; LeBlanc & Meyer, 2005; Meyer, 2003; Olsen, West, & Tse, 1998; Ouellett & Norback, 1993).B. C. Johnson and Chambers (2000) reported that the service performance measure used by the greatest number of respondents in their study was daily participation per total population.

Students today are much more familiar with convenience foods, eating out, and home delivery than students of the 1980s (Ryan, 2000). Even at an early age most young students have eaten in a variety of restaurants and have been allowed to decide what they like and what they will eat. Students are conditioned by the restaurants they frequent and are accustomed to the food choice and quality available at restaurants. Due to family schedules, less home cooking is taking place, and convenience foods are quickly becoming the standard

for comparison of food quality (Dulen, 1999). As a result, students want school meals that look and taste like the fast food they consume outside of school.

Gleason (1995) used a nationally representative sample of 3,350 school-age children to examine participation in the United States Department of Agriculture (USDA) school lunch program and to investigate the relationship between many meal-service characteristics and participation. He found that, in general, if students have alternatives to the school lunch, they will be less likely to participate in the NSLP. For example, the predicted participation rate among students attending schools that have an open campus is 49% compared with 58% in closed-campus schools. Gleason (1995) found that males are more likely than females and younger students are more likely than older students to eat a school lunch. Although age itself had an insignificant effect on participation in Gleason's study, the variable indicating whether the student was in middle school or high school had a strong negative effect. Students in urban and suburban locations were about 10 percentage points less likely than students in rural areas to participate in the NSLP. Snyder et al. (1995) identified quality of food, price of food, whether students' friends ate school lunch, and whether students thought it is "cool" to eat at school as important factors related to participation.

Brown, Hutchinson, and Gilmore (1998) asked students to identify one thing they would change that would encourage them to eat reimbursable school lunches more frequently. Increase in variety and choice was the most frequent response to this question. New and different foods were desired by some students, whereas others wanted specific branded foods as choices. In 1998, Cater and Conklin conducted case studies of selected CNPs. Main areas of focus to improve participation in these programs were the following:

(a) offering more choices of menu items, (b) improving the quality of food, and (c) asking students what they liked or did not like about the school lunch program.

In 2001, Dawn Houser (CNP director of Brevard County, FL schools in 2001) received a prestigious Foodservice Achievement Management Excellence (FAME) award by achieving 81% student participation after renovating the serving lines with exciting themes. In this school district, participation in high school lunch programs was low, and the cafeterias were losing money. Houser's goal was to increase participation and give students a more attractive environment in which to eat their meals by bringing the cafeterias more in line with what attracts teenagers to malls and fast food restaurants. Traditional serving line equipment was still used, but colorful graphics were added to attract students' attention. Serving lines were separated from kitchen facilities and moved to more accessible locations. Overall reaction to the renovated facilities was positive and resulted in increased participation. Houser indicated that administrators and teachers also noted a change in attitude among students who viewed the renovations as an effort made by the district to improve their quality of life (Matsumoto, 2001; "Two More," 2001). Adriane J. Robles, M.S., R.D., assistant director of nutrition services for San Bernardino City Unified School District (CA), also received a FAME award in part for conversion of 25 schools into themed units that increased student participation more than 32% (Matsumoto, 2001).

Types of Service

Traditional forms of foodservice may no longer be the norm. Foodservice in general is changing—the dining expectations of students are different than those of past generations. As a result, the "captive market" mandatory meal concept is declining (Bambenek, 2001), and CNPs are being exposed to a greater amount of competition than in the past. Every day

brings new information, service programs, and technologies that render yesterday's standards and practices obsolete. CNP directors must be creative and innovative when analyzing and improving service processes in order to exceed customer expectations ("Position of the American," 1997). Coinless vending, remote display cases, food courts, deli-style, self-serve, or a combination of these methods are emerging trends, and fewer high schools are utilizing straight-line stainless steel counters (Carr, 1995).

The Georgia Department of Education, School, and Community Nutrition Program and the Survey Research Center of the University of Georgia, Athens, conducted the Quality Measures survey of schools in May 2002. Survey participants included 338 school nutrition directors and 178 superintendents at the system level and 245 principals and 270 school nutrition managers at the school level. Items that were rated highest for program implementation included: (a) providing a serving area that supports food safety; and (b) providing a serving area that promotes food quality, including attractive presentation (C. L. Davis, Bason, & Hopgood, 2004).

According to Pannell-Martin (1999), the most common types of foodservice styles in schools are cafeteria-style, self-service, and food court. With cafeteria-style service, employees serve food onto trays as students move in front of the serving area. A "scramble" cafeteria-style service is a variation of this traditional style where food is served at several separate stations. Students make selections as they go from one station to another and then exit by the cashier. Self-service could be described also as "buffet-style" service with students serving themselves. Food courts are a newer form of service for schools. In food court service, students select a menu from several choices and go to the "court" offering that menu where they are served.

Carr (1995) provided a useful review of foodservice trade and research publications to identify the major concerns of the foodservice industry at that time. Among the many issues identified was the design of alternative styles of foodservice in response to an increasingly diverse customer base. The recommended service styles tended to focus on those styles that offered a wide variety of food choices and quick service. Hackes and Shanklin (1999) reported that student preferences and an increasing variety of foods offered were factors considered by districts offering food bars. Sanitation, food costs, and labor were reasons food bars were not offered.

One solution to long lines in the cafeteria is a food court set-up. Stations of different food choices and express lanes can expedite traffic flow in the cafeteria ("Making the Hot Lunch," 1998). Several service styles have been implemented in CNPs and described in the literature. The food court style, for example, was implemented in two high schools in Erie, Pennsylvania that renovated their traditional straight-line cafeterias into food courts similar to those in shopping malls ("Improvement in Presentation," 2002). The foodservice managers reported that this change increased breakfast participation by 5% and lunch participation by 15%. Because students had more food choices, the rationale was that they would choose more nutritious foods, and, because foods were grouped in stations, waiting in line would be reduced.

In Davenport, Iowa, students were involved in the process when their high school cafeteria was redesigned, beginning with a highly detailed survey of their ideas and opinions about specifics of their food experience, their menu choices, and their ideas about their dining preferences outside of school ("Kids' Input," 2001). Student advisory committees were formed to represent the diversity of the school in ethnicity, special needs, patrons of

the cafeteria, and students who never ate there. Following the initial remodel, sales rose 8%, and reimbursable meals went up from 450 to 650 per day (Riell, 2003).

The "scramble system" was introduced in the 1970s. It was based upon a design that allows customers to move from one station to another without having to pass along the entire serving line. Beasley (1995) indicated that scramble systems permit more people to be served in shorter periods of time than less flexible servery configurations. However, a scramble system design can take up more than three times as much space as a straight line servery. Thus, it may be impossible to serve the same number of customers within the same space as other designs. The success of a scramble system is often determined by whether sufficient square footage can be allocated to allow customers to circulate easily among individual stations (Beasley, 1995).

The Seminole County, Florida CNP maintains a commercial-style mall food court design and atmosphere. John Dickie, operations coordinator, noted that they fashioned their menu offerings and presentation of products after what students are accustomed to seeing at stadiums, convenience stores, and fast food establishments outside school ("Schools Put," 2003). Eric Peterson, with the School Nutrition Association (SNA), noted that schools are moving away from cafeterias toward food courts and lounge-style dining (Popp, 2006); Maria Davis, foodservice director at Everett (MA) Public Schools, identified food court style presentation as one reason Everett High school has a successful program (Popp, 2006). St. Johns County public schools in St. Augustine (FL) raised student participation in its high schools by 46% by adding food courts and renovating the high schools ("FL Schools Adopt," 2001).

When self-service salad and dessert bars were introduced in the mid 1970s, there was much concern that the increased number of choices, combined with unsupervised control resulting in excessive portion sizes and increased waste, would cause severe financial crises for dining operations (Ryan, 2000). Now foodservice operations in general and CNPs in particular have found a need for extensive variety and convenience in order to have a successful program. Presentation is important to schoolchildren. Food that looks fresh and inviting is more likely to be eaten (Spears & Gregoire, 2006).

Customer Satisfaction

Customer satisfaction, described by McDougall and Levesque (2000) as the customer's overall judgment of the service provider, is an important factor in the measurement of success in today's business environment. If performance meets or exceeds customers' expectations, quality is perceived to be high, resulting in satisfaction (Bitner, 1990). Research shows that service quality and satisfaction are indeed distinct constructs (Fournier & Mick, 1999). McDougall and Levesque (2000) further stated that, though they are distinct constructs, service quality and satisfaction have a causal relationship.

Meyer and Conklin (1998) suggested that successful CNPs give their student customers a central role in the operations. Kashyap and Bojanic (2000) agreed that a customer-oriented approach is vital in the marketing concept. As implied by these authors, the study found that focusing on the customer can provide the CNP director an opportunity to identify important product and service attributes that affect student perceptions of value and satisfaction. In recent years, CNPs have experienced many changes that have affected menu concepts and service styles. Students want maximum choice with wide variety, flexibility, customization, and freshly prepared food (Buzalka, 2003; Law, 2004). Customer

satisfaction and such related areas as service quality have received significant attention in the marketing literature (Bernhardt, Donthu, & Kennett, 2000; Parasuraman, Zeithami, & Berry, 1985). These authors have stressed the importance of identifying customer expectations and exceeding those expectations in providing quality service.

Customer service is an area where potential improvements can be made in CNPs. Bell, Gilbert, and Lockwood (1997) noted that aspects such as the décor and lighting, as well as signage, staff uniforms, and the overall appearance and cleanliness of the staff and facility, contribute to satisfaction.

The exchange of both tangible products (food) and intangible actions (services) in CNPs occurs face-to-face at the point of customer contact between frontline employees and students. Bell et al. (1997) discussed an interpersonal category of customer satisfaction that included all incidents involving the way customers were treated by the staff. These included aspects of the skill displayed when interacting with the customer, the general performance of the staff, and the empathy and feeling in the interaction. If CNP directors are to improve their customers' perceptions of the level of service quality that they offer, they must make sure that CNP staff are trained in customer service (Meyer, 1999). Students respond positively to friendly, knowledgeable CNP assistants who are not wearing clinical "lunch-lady" white uniforms and dated hairnets ("Making Hot Lunch," 1998). A simple fashion change can communicate the message that CNP team members are in touch with current trends.

Many CNPs have found that satisfaction is related to participation and financial stability (Brown, Gilmore, & Dana, 1997; Brown et al., 1998; Marples & Spillman, 1995;

Meyer, 1997; Meyer & Conklin, 1998). Benchmarking (Hwang & Sneed, 2004) and evaluation of customer satisfaction are important parts of a quality program.

The October 2005 *School Foodservice and Nutrition* magazine listed 10 key marketing trends for 2005 ("News Bites," 2005). Two of these trends in product or service marketing were convenience and sensory appeal. Consumers increasingly are demanding easier, faster, and disposable products; experience has become important, especially to young consumers. They are more tolerant of risk and change, leading to extreme sports, busy weekends, and a willingness to try more unusual foods.

Time

By far the most often-studied environmental factor that contributes to customer satisfaction is time. The School Health Policies and Programs Study 2000 (SHPPS) reported that, on average, students had 23 minutes to eat after they were seated for breakfast and less than 24 minutes to eat lunch (Wechsler, Brener, Kuester, & Miller, 2001). More than 99% of the schools surveyed reported that once students were seated, they had at least 10 minutes for breakfast, and about 80% of the schools indicated that students has at least 20 minutes for lunch. Another salient aspect of meal scheduling in schools was serving time. In about 25% of the schools surveyed, the lunch period began before 11 a.m.; in nearly 5% of the schools, lunch was served before 10:30 a.m.

Conklin and Lambert (2001) and Conklin et al. (2002) reviewed a series of three studies of time allowed for lunch in the school schedule. The authors' primary concern was the effect of the short time for lunch on students' health, noting that adequate time is one of ten keys to healthy eating published by the Partnership to Promote Healthy Eating in Schools in 2000 (American Academy of Family Physicians et al.). Conklin et al. (2002)

agreed with the position taken by the American Academy of Family Physicians et al. (2000) that students should have scheduled lunch periods as near the middle of their school day as possible and long enough for them to enjoy eating healthful foods with friends.

Conklin and Lambert (2001) reviewed the studies sponsored by the National Food Service Management Institute in order to determine what a reasonable lunch period should be and to investigate how the lunch period was spent in activities other than eating at a table once students were seated. Sanchez and Contreras (2003) concurred that this time period is an indicator of the efficiency of a foodservice operation. In a review of several studies, Conklin and Lambert (2001) found that far more was involved in the lunch period than the time students spent sitting at tables and actually eating.

One of the valuable contributions of the studies reviewed by Conklin and Lambert (2001) and Conklin et al. (2002) was the detailed breakdown of the time encompassed by the lunch period. It included time getting to the cafeteria, service time, and time spent cleaning up tables and disposing of trays. The studies also found that service time was shorter/longer depending on how many serving lines were available, which food choices were placed on each of the lines, the degree of training and the experience level of the foodservice staff and cashiers, whether a staff member was designated to replenish items as students moved through the lines, and whether an automated point-of-sale system was used.

Marples and Spillman (1995) identified the length of the lunch period and the amount of time spent waiting in line as significant factors contributing to student participation in the CNP. They surveyed high school students in the Cincinnati public schools, collecting data on lunch habits in school, food preferences, influence of friends, perception of the nutritional value of the school lunch, the quality of the food, the variety of

the food, the price, the length of the lunch period and the serving lines, the atmosphere in the lunchroom, and the friendliness of the foodservice personnel. In this study examining the attitudes of high school students toward the school lunch program, 82% of students reported that the lunch period was too short, and 62% indicated the wait in lunch lines was too long.

Reddan, Wahlstrom, and Reicks (2002) conducted a survey of middle school students in order to describe their perceptions of the benefits of and barriers to eating breakfast. Although the focus of their research was to compare perceptions in schools with and without the School Breakfast Program, their findings are suggestive of students' general attitudes toward eating in school and are, therefore, related to the current research. Research data on breakfast have shown that frequency of eating breakfast is associated with younger students and with males. As students age, they tend to skip breakfast more often, and girls tend to skip as a weight control measure.

In terms of benefits, 62% of the students that Reddan et al. (2002) surveyed believed that eating breakfast gave them more energy and mental alertness. Only about 18% believed that eating breakfast helped curb their hunger before lunchtime. In terms of barriers, lack of time and lack of appetite were the most predominant. Other responses included that they did not have food at home, that they were concerned about breakfast making them gain weight, and that they did not want others to see them eating at school.

Students need approximately 8 to 10 minutes to consume their lunch (Bergman, Buergel, Englund, & Femrite, 2004; Conklin & Lambert, 2001). This represents the time required to actually eat and drink but does not include time to socialize. Buergel, Bergman, Knutson, and Lindaas (2002) showed that time to consume the lunch increases when children are given more total time to eat.

Bergman et al. (2004) indicated that wait time averages from 5 to 9 minutes and can be determined at each school by timing from when the lunch period starts to when the last child sits down and is ready to eat. In many schools, a bell rings to indicate the start of lunch period. The period often begins at the time children are released from their classrooms to walk to the cafeteria. Previous studies have shown that waiting in the service line can vary from 2.5 to 3.3 minutes for elementary school students, depending on the type and speed of service (Conklin & Lambert, 2001). However, this study does not take into consideration the amount of time it takes a child to travel from the classroom to the cafeteria. Sanchez and Contreras (2003) found that the speed at which students navigated the line was determined primarily by the rate at which a cashier completed a transaction with each student.

Bergman et al. (2004) determined that from 24 to 35 minutes is an appropriate amount of time for providing a healthful school dining environment. This proposed lunchtime range might be too short for schools that have an excessive waiting time and might be too long for schools that have less than a 5 minute waiting time for travel, service, and seating.

A study conducted by Brown et al. (1997) identified the perceptions of 467 eleventh grade students, 112 faculty members, and 32 school foodservice workers about food quality and dining environment in selected schools. Almost 40% of the students and 20% of the faculty purchased the reimbursable school lunch four or five times per week. Their reasons for doing so included not being allowed or having insufficient time to go elsewhere, convenience, and affordability.

Socializing is an important aspect of dining, because allowing students sufficient time to relate to others provides a break in routine and refreshes them for afternoon classes.

This may be the reason why members of the Partnership to Promote Healthy Eating in Schools mentioned the importance of enjoying meals with friends as a vital component of healthy eating (American Academy of Family Physicians et al., 2000).

Sanchez, Hoover, Sanchez, and Miller (1999) surveyed 8,682 students to investigate the time used to eat lunch. Results indicated that the majority of the students had adequate time to eat school lunch, but in some cases, junior and senior high school students spent more than 15 minutes in the serving line. Excessive time spent in the serving line was, in part, because of the large number of students entering the lunch line at the same time, making it difficult to serve them in a timely manner. These researchers recommended that the effect of foodservice operational procedures such as staffing and the configuration of the serving line on the time spent in the serving line should be explored. For example, where multiple lines are available, the demand for the lines should be balanced by offering equally popular menu items.

In a related study, Boger (1995) made a comparison of service times for four quick service restaurant delivery systems (scramble, production line, mall, and airport). The time for service was divided into two elements: time to reach the service counter and time from reaching the service counter to leaving the service counter. The total ranged from 2.53 to 4.59 minutes with the production line requiring the least total time. Several studies (Bergman et al., 2004; Conklin & Lambert, 2001; Conklin et al., 2002; Marples & Spillman, 1995) have noted that staggered release time for students, though most efficient, is not practical in today's high school environment.

Conklin et al. (2002) reviewed three studies sponsored by the National Food Service Management Institute to measure the average time required by K-12 students to consume

lunch. These studies indicated the average service time per student varied from approximately 3 minutes to slightly over 8 minutes. Among the factors that influence service times are the following: (a) the number of serving lines, (b) whether all food choices are available on each line, (c) training of service staff and cashiers to provide efficient service, and d) an automated point-of-sale system. These computerized systems track meal eligibility and allow for the creation of student accounts into which funds can be deposited, thereby negating the need for students to purchase and use meal cards.

Nettles and Gregoire (1996) used computer simulation to determine the impact of varying job responsibilities of CNP assistants on time to serve students as well as to examine the effect of varying class arrival times on total time in line and number of students in line. Results of variations in the simulation model suggested that use of one CNP assistant as a runner to refill food items on the line could reduce student wait time by 56%. Altering the class arrival time also reduced the amount of time students took to move through the line. Nettles and Gregoire (1996) recommended that a study be conducted to examine the same two issues for different types of service systems, such as multiple serving lines, scatter systems, and food courts; that study should also examine the number of chairs and tables available in relation to arrival time of students to the cafeteria. This proposed study will include these recommendations with minor modifications.

Queuing

Queuing (or lining up) is a familiar element of most service delivery systems. It has the potential to affect the customers' overall satisfaction with the service encounter. In the marketing literature (Ruyter, Wetzels, Lemmink, & Mattsson, 1997; Stevens, Knutson, & Patton, 1995; G. B. Voss, Parasuraman, & Grewal, 1998), a customer's degree of

satisfaction with waiting or with the service received depends in its entirety on the actual performance of the delivery system. We now have film developed and eyeglasses ready within an hour. Overnight package delivery is an accepted standard. This trend towards providing a faster service is expected to continue in the future (Carr, 1995; Folkes & Wysocki, 2001; Sloan, 2001). In a variety of industries, new and innovative approaches are continuously being developed to reduce and, in some cases, totally eliminate customer waiting time: banks provide 24-hour service with ATMs, hotels slide bills under guest room doors on the last night of the stay so there is no need to queue to check out at the cashier desk in the morning, and more and more restaurants are offering home delivery.

Providing a high level of customer satisfaction is the true objective of shorter lines in school cafeterias. When process analysis demonstrates that there are opportunities to shorten waits without adding costs, there is no question that, in most situations, shorter waits will improve satisfaction (M. M. Davis & Heineke, 1994).

In 1995, Marples and Spillman studied factors affecting students' participation in the Cincinnati Public Schools lunch program. Using a questionnaire, 1,804 students were asked their opinions, feelings, and attitudes toward the program. Results indicated that the length of the lunch period and the amount of time spent waiting in line were significant factors affecting the students' decision to participate. Elementary students tend to have adequate time to eat because they come to the lunchroom by classroom; however, large numbers of high school students generally enter the lunch line at the same time.

Several factors have been identified that could prove useful for decreasing the amount of time students wait in line including (a) offering additional service lines, (b) using remote self-service bars, (c) offering many alternate lunch periods to reduce the number of

students competing for service at one time, and (d) designing the configuration of the serving area to provide many access points (Bergman, Buergel, Joseph, & Sanchez, 2000; Marples & Spillman, 1995).

Cafeteria Environment

The environment in which food is selected and consumed is an important factor in its acceptability, choice, and consumption, but the problem still facing many school systems is that "many cafeterias look today as they did in 1960" (Pannell-Martin, 1999, p. 360). The result is a growing effort to "reimage" the lunch room with more contemporary looks and concepts. The atmosphere should be attractive, clean, friendly, positive, and with eye appeal (Pannell-Martin, 1999). Attractive signage and adequate lighting are essential for projecting a positive image. Nevertheless, most new facilities continue to be designed based on traditional concepts.

Environmental influences on human behavior were studied by Sanchez and Contreras (2003). Read, Sugawara, and Brandt (1999) studied the interaction between factors of the physical environment and the perceptions and preferences of school-age children. Studies also have focused on children's satisfaction with lunches offered in public schools (Meyer, 2000). But no research was found that explores the physical environment and its influence on participation and satisfaction in the NSLP by *high school students*.

Superintendents, principals, CNP directors and managers, teachers, coaches, and school business officials (a total of 1,222 respondents) were surveyed by Rainville, Choi, and Brown (2003), who noted that cafeteria atmosphere is an important barrier to a healthy school nutrition environment. Meyer (2001) found that as children move up in grades, parents are less satisfied with the pleasantness of the dining area and the friendliness of the

staff. This dissatisfaction could be due to children having become accustomed to retail marketing that includes a colorful environment and excitement (Meyer, 2005).

Not only are school cafeterias a place for students to dine, but they also provide the primary site for social interaction among students. Lambert, Raidl, and Safaii (2003) conducted a series of focus group discussions with elementary school parents and teachers in five Idaho school districts. The study indicated that efforts should focus on providing a cafeteria environment where students can socialize and eat at their leisure. These researchers also noted that creating greater visual variety and comfort in dining areas can be accomplished through changing floor and/or ceiling levels, using a range of lighting options, and providing a variety of seating and table types and varying wall treatments.

Wechsler et al.'s (2001) SHPPS study found that roughly 9 of 10 schools had a cafeteria on campus. In about 6% of them, the cafeteria was less than half full at lunchtime. In about 27% of the schools surveyed, the cafeteria was 50% to 75% full. A little more than 60% of the schools reported their cafeterias being 76% to 100% full, and about 3% of the schools exceeded their seating capacity.

The noise level, lighting, location in relation to classrooms, décor, and seating arrangements could all presumably influence students' comfort and behavior. However, Sanchez and Contreras (2003) could find no research studies of the relationship between the physical dining environment and lunch consumption in school cafeterias. Their study was conducted in four Texas junior high schools serving more than 6,000 students, about half of whom were eligible for the NSLP. In addition to measuring plate waste, the stated focus of the study, the research team collected data on waiting times (including travel to the cafeteria), temperature, humidity, noise level, and lighting. Further, the team surveyed

students' perceptions of the cafeteria's décor, physical condition, noise level, lighting, temperature, seating arrangements, and crowding, how hungry the students were at lunch time, and how long they had to eat their lunch. An informal poll asking about eating lunch in the school cafeteria elicited negative comments about the food and place being unpleasant. The team learned that perceptions of food quality may be affected not only by the product itself, but also by the customers' expectations about the environment in which the food is served and the service provided.

Perhaps the significance of this highly detailed study of Sanchez and Contreras (2003) laid in the very design factors that confounded the results. By using a cross-sectional approach in which four schools were studied and data collected on different days, the researchers were unable to make comparisons among the schools. In addition, although the environmental variables used were precisely measured, those variables could not be related to any human factors because the food items offered were too varied, the students' perceptions were too general and not probed, and their food choices were not questioned. In many ways, the study was representative of the problems researchers have had with this subject to date.

One of the approaches to increasing students' participation in school meals has been traditional marketing described by Cline and Lusk (1999). These authors cited case studies involving marketing efforts in five schools. Efforts to counteract negative attitudes toward the quality of the cafeteria food, the service, and the physical environment included student taste tests, a varied menu, uniforms for servers, and involving the art department in improving the appearance of the cafeteria. They suggested that CNP professionals should include marketing into day-to-day operations.

In a study by Meyer et al. (2000), a number of issues identified by the participants contributed to a lack of student satisfaction. Participants stated that cafeterias were frequently very noisy, that dining area décor and seating arrangements were not conducive to pleasant dining, and that facilities were overcrowded. The cafeteria dining area atmosphere was the second most noted barrier to participation. Students noted long lines, outdated facilities, and overcrowded conditions as not being favorable to their making good eating decisions. Some focus group participants shared that changes in furniture and long-term upgrades in the cafeteria itself have made significant differences.

Bordi, Park, Watkins, Caldwell, and DeVitis (2002) suggested that an important meta-factor in food choice is the context in which the food is served and consumed. This included lighting, decoration, and comfort. Some studies on atmosphere have shown that music, climate, and other contextual factors influence choice and consumption (Bordi et al, 2002; Brown et al., 1997, 1998; Meiselman et al., 2000; Meyer et al., 2000).

The image of a first-class restaurant includes a particular level of food quality and service, as well as levels of price, décor, and the type of customers one would expect to find in such establishment. This may have implications for CNPs. When the same food is served in different environments, acceptance of the food can be very different. In first-class restaurants, the location would be described by physical characteristics of size, space, color, noise, light, brightness, and so on. The main finding in a study by Meiselman et al. (2000) was the consistently higher rating of food served in a restaurant over identical food served in a cafeteria. The ranking of locations according to expected liking was: home > traditional full-service restaurant > diner/fast food > school foodservice > military foodservice > airline foodservice > hospital foodservice. Therefore, the full-service restaurant was rated more

highly than institutional settings such as school foodservice, suggesting that environment or setting might be included in models of consumer acceptance.

In the town hall meeting on best practices at the 2005 School Nutrition Association's Child Nutrition Industry Conference in Austin (TX), presenters told that a school makeover is not just about food but involves creating a "holistic dining experience" and then creatively and aggressively marketing the school's new programs through signage, public relations, and promotions (Anderson & Lobo, 2005). In CNPs, signage can help convey the fast food/food court image that high school students relate to while offering the CNP its own brand identity (White, 2005).

There have been anecdotal reports such as McBride's (1995) lively account of the project involving the transformation of a school lunchroom into an Italian restaurant. That project began with a concern about disciplinary problems in the lunchroom and mushroomed into a school project that involved students, teachers, administrators, parents, and foodservice staff.

Steve Smay, foodservice director for Springfield (MO) Public Schools, reported a 30% increase in lunch participation after the district remodeled the dining facilities (Greathouse, 2006). He also updated employee uniforms from dull black and white to a more causal look featuring polos and khakis. Introducing new menu options and food preparation styles, the University of Texas replaced straight-line food counters with several dining stations that offered a more diverse array of options (Buchthal, 2006). Regenia Phillips, director of dining services, noted that the straight-line design was preventing the department from doing anything innovative.

Even the country's largest restaurant chain understands the need to occasionally renovate to stay relevant to today's customers (Buchthal, 2006). McDonald's opened its new flagship store in Oak Brook, IL in May 2005. It features a curved service counter, two levels of seating, oversized windows, plasma screen televisions, wireless Internet access, and a bright white and yellow décor. They have moved away from the fiberglass seating for which McDonald's has been known. Danya Proud, spokeswoman for McDonald's, explained that remodeling stores is essential for foodservice establishments (Buchthal, 2006). Restaurants must provide an experience that stays consistent with other happenings in the business.

In the September 2005 *School Foodservice & Nutrition* magazine ("Asked and Answered," 2005), the School Nutrition Association posed this question to the membership: "If you had an unlimited budget, what top changes would you make?" Five of the six answers submitted by CNP Directors included renovating service areas and cafeterias. Using bright colors, creating food courts, adding booths, and creating an environment that is "cool" are some of the changes directors would like to make to increase participation.

Financial Management

CNPs increasingly are called upon to function with limited resources and to maintain a financially solvent operation without district subsidies. The expense budget of the CNP may be a small percentage of the school district's total budget. However, the cost of resources consumed and the revenue generated by the department may equate to millions of dollars; neither is considered insignificant by school district administrators (Pannell-Martin, 1999). CNP directors must make decisions regarding resource allocation to allow for the provision of efficient, effective, and potentially revenue-generating programs. These decisions are best made by a person who is competent in management; foodservice systems,

including safety and quality; and the culinary arts. Although competence in all of these areas is essential, competency in management is primary to the director's ability to coordinate all facets of a successful system ("Position of the American," 1997). The fundamental role of the CNP director is to manage the program effectively and efficiently in order to meet the financial goals of the program and to provide services at the level of quality expected by all the customers. The director should also be knowledgeable about the cost effectiveness of various serving methods and be able to estimate costs when developing new programs.

Griffin, Sacklin, and Bierbauer (2001) noted there is pressure on the majority of CNPs to meet the financial obligations of the district. A number of CNPs are operated at a deficit (March & Gould, 2001), and many state directors of CNPs have concerns about cost control and effective financial management (Cater, Cross, & Conklin, 2001). Establishing financial objectives and goals for CNPs is one of the necessary competencies identified by the American School Food Service Association's (ASFSA) School Foodservice and Nutrition Specialist credentialing program (Rainville & Carr, 2001).

Analysis of time-series data by Bernhardt et al. (2000) revealed that a positive relationship between changes in customer satisfaction and changes in the financial performance of a fast food restaurant emerge and that customer satisfaction does increase profit. Although there is always pressure to get a quick return on investment when implementing customer satisfaction programs, it is clear that the real effects of such programs take place over time. Similarly, it is important to remember that attempts to increase customer satisfaction also may have a positive impact on employee satisfaction. If customers are satisfied, employees will not have to listen to complaints and may feel better about their jobs, leading to increased employee retention and reduction in the cost associated

with hiring new employees. Thus, there may be an even further positive impact on profitability over time (Rust, Zahorik, & Keiningham, 1995).

Meal programs must gain support of school administrators to formulate and maintain policies that augment financial success. Such issues as meal scheduling, payment collection methods, bus scheduling, and meal pricing may not be issues that are controlled by CNP directors, yet they can seriously affect the financial status of the program (March & Gould, 2001). School meal programs perform a critical role in student learning and physical welfare. With such an important mission, district administrators and managers should seek to achieve programmatic financial self-sufficiency.

Qualitative Research

According to Creswell (2002), in qualitative research the researcher does not begin data collection with a set instrument to measure distinct variables. Instead, the researcher seeks to learn from participants in the study and then develops protocols. Examples of these protocols include an "interview protocol" consisting of four or five questions, and an "observational protocol" in which the researcher records notes about what he or she observes. With each form of data, the qualitative inquirer gathers as much information as possible to collect detailed accounts for a final research report.

Throughout the process of research, qualitative researchers collaborate with the individual(s) being studied. Collaboration means that the participants involved in the study are co-researchers. In practice, collaboration may assume multiple forms (Creswell & Miller, 2000). For example, participants may help form the research questions, assist with data collection and analysis, and be involved in writing the narrative account.

Qualitative reports need to be realistic and persuasive in order to convince the reader that the study is an accurate and credible account. Qualitative reports typically also contain extensive data collection to convey the complexity of the phenomenon or process (R. B. Johnson, 1995). The data analysis reflects description and thematic development as well as the interrelation of themes.

Case studies are a type of qualitative research where the researcher may focus on an event, program, or activity. No standard definition for a case study was found, but drawing from definitions presented by Creswell (2002), Creswell and Miller (2000), Hall and Rist (1999), Leonard-Barton (1990), Meredith (1998), and Yin (2003), a case study examines a phenomenon in its natural setting, employing multiple methods of data collection to gather information from one or a few entities. The boundaries of the phenomenon are not clearly evident at the outset of the research, and no experimental control or manipulation is used. Table 2.1 contains a list of six characteristics of case studies summarized from the papers mentioned above.

Leonard-Barton (1990) described a case study as:

> a history of a past or current phenomenon, drawn from multiple sources of evidence. It can include data from direct observation and systematic interviewing as well as from public and private archives. In fact, any fact relevant to the stream of events describing the phenomenon is a potential datum in a case study, since context is important. (p. 249)

Bebensat, Goldstein, and Mead (as cited in Meredith, 1998) cited three outstanding strengths of case research:

1. The phenomenon can be studied in its natural setting, and meaningful, relevant theory generated [can be] from the understanding gained through observing actual practice.
2. The case method allows the questions of why, what, and how to be answered with a relatively full understanding of the nature and complexity of the complete phenomenon.
3. The case method lends itself to early, exploratory investigations where the variables are still unknown, and the phenomenon are not at all understood.

C. Voss, Tsikriktsis, and Frohlich (2002) suggested that when one conducts case-based research it is not uncommon for the research question to evolve over time and for the constructs to be modified, developed, or abandoned during the course of the research. This can be a strength, as it can allow the development of more knowledge than if there were just a fixed research question.

Table 2.1. Common Themes of Case Study Research

The research investigates a phenomenon within its real-life context (Leonard-Barton, 1990).
The researcher seeks to learn from the participants in the study and develops protocols (Creswell, 2002).
The research involves using multiple sources and techniques in the data gathering process (Creswell & Miller, 2000).
Researchers must be aware that they are going into the world of real human beings who may be threatened or unsure of what the research will bring (Meredith, 1998).
The research is most likely appropriate for “how” and “why” questions because these deal with operational links needing to be traced over time, rather than frequencies of incidence (Yin, 2003).
The three divisions of qualitative research methods are interviewing, observation, and document analysis (Hall & Rist, 1999).

According to Hall and Rist (1999), the three divisions of qualitative research methods are interviewing, observation, and document analysis. They note that with the use of these three data collection strategies, one has a basis for drawing conclusions with strong validity. Using multiple data sources can deepen the understanding and hence is advantageous in comparison to using a single method.

R. B. Johnson (1995) noted several advantages of the individual interview including those related to the amount of in-depth information obtained and the benefit that comes from a face-to-face interaction. Up-close observation of body language, tone of voice, and reaction to distractions are all factors that can assist the interviewer in analyzing the interview data. The primary weaknesses of the individual interview technique are logistical in nature (Creswell & Miller, 2000), as they are both time consuming and expensive.

CHAPTER 3.

METHODOLOGY

A case study research approach was utilized in this research to determine the service methods of successful Georgia high school CNPs, and explore similarities and differences among successful Georgia high school CNPs in relation to service methods and dining environment. This form of research allowed an in-depth study of service methods, service designs, and cafeteria design and décor.

For this research project, a case study method with interviews, observations, and archival records (documentation) was used to collect, analyze, and interpret service styles and dining room environments associated with successful CNPs. The research design used a comparative approach with five case study sites. A complete study was conducted at each site to seek evidence regarding the facts for the case; a cross-case analysis was then conducted to identify common and different themes among all cases.

A case study for this research was a viable strategy for three reasons. First, the researcher studied successful high school CNPs in a natural setting, learned about the program, and generated theories from practice. Second, the case method allowed the researcher to answer "how" and "why" questions, that is, to understand the nature and complexity of the processes taking place (Yin, 2003). Questions such as "Why did you choose this serving method?" and "How do you determine staffing needs?" were critical ones for the researcher to pursue. Third, a case approach was an appropriate way to research an area in which few previous studies have been done. With the rapid pace of change in CNPs, many new topics have emerged each year for which valuable insights can be gained through the use of case research.

The Iowa State University Human Subjects Review Board approved the study prior to data collection. A copy of the approval letter is in Appendix A. Each CNP director also completed a School Profile form (Appendix B). The director was asked to share general statistics regarding enrollment figures, participation figures, number of students eligible for meal benefits, and meal prices (Cater & Mann, 1997). In addition to general statistics, the district also provided information on point-of-sale systems and square footage of serving and dining areas. This form was returned to the researcher before the site visit.

Credibility of the Researcher

I have more than 20 years experience as a CNP director. I am a Registered Dietitian with a master's degree in Institution Administration. I am currently a CNP director in Georgia and am personally connected with many CNP directors in Georgia. I have worked with architects to plan layout and design and develop equipment specifications for eight new cafeterias. To keep current in CNPs, I am a member of the School Nutrition Association (SNA) and have attended numerous seminars and national conferences. In 2002 I was a panelist on the National Food Service Management Institute's teleconference on "Elements of Effective Financial Management," and presented a seminar at the Georgia SNA titled, "How Not to Design a Kitchen."

Because of my extensive understanding of the child nutrition field, I have insight into the benefits this research has for my CNP and a firm grasp of the issues being studied. Through my involvement in SNA, I have known and worked with four of the directors interviewed in this study, but before the study began, I had no first-hand knowledge of their CNP operations. As I conducted this research, I looked through the "lenses" of both an expert in the field and a CNP director. My intent from the beginning was to be objective and

to delve into the subject of serving methods and cafeteria environment in successful schools; and I did not have a preconceived position.

Case Selection

Since the purpose of this research was to look at serving methods and dining environment in successful high school CNPs in Georgia, the selection process focused on where to look for cases and evidence that satisfied the purpose and answered the research questions posed. According to Yin (2003), selecting cases must be done so as to maximize what can be learned in the period of time available for the study. Site selection must have a clear rationale, and sites are usually chosen specifically because of their significance (Ragin, 1999).

High schools in Georgia whose CNPs have high participation rates while maintaining financial viability were selected. The average participation rate for high schools in Georgia is 53.7% (*Facts and Figures*, 2006), therefore I selected schools with 60% participation, as these would be considered above average. Financially viable CNPs had been described as "the CNP fund ended the school year with a balance sufficient to cover two months operating cost" (Cater & Mann, 1997). Because schools with larger numbers of students who qualified for free and reduced-cost lunches were more likely to experience a high participation rate in the reimbursable school lunch program (Bergman et al., 2000), schools were not selected if the percentage of free and reduced lunches was greater than 50%. Another determining factor for the selection was the cooperation of the administration and CNP management at the schools.

Because of the small number of cases, it was important that the high schools participating in this study be identified as "successful" by the Georgia State Department of

Education, Child Nutrition Division; therefore, they were asked to provide a list of all high schools meeting the following criteria:

1. Less than 50% of the enrolled students qualified for free or reduced price meals,
2. The 2005-2006 end of school year CNP fund for the district had a balance sufficient to cover 2 months operating cost, and
3. Participation in NSLP was greater than 60%.

Forty high schools met the criteria, therefore they were significant. When selecting potential cases, I considered logistics as well as my resources, and I arbitrarily decided to study five high schools and to make the selections from different geographical regions of the state. Because the Atlanta area has the largest concentration of the state's population, I decided to select two schools from the metro Atlanta area. I divided the 40 schools identified as successful into four regions. I then contacted the school in a region with the highest participation rate to see if it was willing to participate in the study.

When contacting the CNP director of each potential site, I clearly described the study and who would be involved (researcher, assistant, manager, and director). The director was told the amount of time and effort required. I provided assurance that the organization would not be harmed by its participation, sought assurance from the CNP director that reasonable access would be provided, and requested that essential data would be made available. For various reasons, only four of the directors contacted declined to participate.

The benefits to a CNP director participating in this research project included learning more about the program and getting feedback and new insights from me. In addition, there was the opportunity to contribute to knowledge and CNP research. In that each site selected

was identified as a successful program, there were the additional benefits of recognition and publicity.

Data Collection Instruments

According to Hall and Rist (1999), the three divisions of qualitative research methods are interviewing, observation, and document analysis. These three divisions were utilized in this study.

Interviews

For each case study, interviews were conducted with the district CNP director and the CNP manager of the high schools. I interviewed, in person, each director and manager separately in their respective offices. Each interview was audio taped and transcribed verbatim. The interviewing process included specific questions, probes, and open-ended questions. The questions were designed to gather information about basic policies regarding the role of the director and manager in choosing serving methods, planning menus, food production polices, and staffing. The interview guide also sought information on training, dining room renovations, and reasons for excellent participation. A copy of the questions is included in Appendix C.

Observations

As part of the research process, observations were conducted at each site and the observations recorded. The observations provided visual clues that were significant in answering research questions. Because two or more researchers can capture greater richness of data and rely more confidently on the accuracy of the data than a single researcher (Eisenhardt, 1989; Stake, 2006), both a trained assistant and I observed operations and recorded on the Observation Recording Form. The training for this assistant covered the

reason for the study, the type of evidence being sought, what variations might be expected, and a review of the observation form. The assistant and I conducted joint observations documenting the cafeteria operation, followed by a discussion to compare documentation and assure accuracy. A copy of an Observation Recording form is included in Appendix D. This form was designed to record observational records of detailed, nonjudgmental, concrete descriptions of what was observed (Marshall & Rossman, 2006). It served as an observational checklist to record descriptions of dining room décor, seating, and serving area. Observations in the dining room and serving area during the lunch periods were also recorded on this form.

Documents

Documents studied in this research included administrative reports, menus, school district profiles, and any documents that were germane to the investigation including local school documents such as reports generated by Point-of-Sale (POS) software. Georgia Department of Education Reports also were obtained from the CNP directors before the visits, including: school level lunch participation and cost report (which includes food, labor, and other costs per lunch), profit-loss report, non-reimbursable sales report, and cash resource management report. These documents allowed me to become more familiar with the CNP at each school and helped in exploring the commonalities and differences among the programs studied.

Data Collection Process

Before the site visit, all local school documents such as menus, POS reports, and Georgia Department of Education reports were collected. The CNP director was asked to complete the School Profile.

The site visit was planned to be completed in two days and consisted of three parts: (a) interview with the CNP director, (b) interview with the CNP manager, and (c) observations as proposed in Appendix D. At two sites follow-up e-mails for clarification of certain questions and to collect additional information or to verify practices were necessary.

During the site visits, research data were collected on serving methods, labor hours allocated to service period, time needed to serve students, food expenses and other operational information, lunch participation, and dining room ambiance. Data were gathered through interviews with the district CNP director and CNP manager and observation of serving methods and dining environment. At the conclusion of each site visit, the assistant and I debriefed to discuss observations and then met with the CNP director to help clarify any questions or issues. If any discrepancies were found, they were resolved before leaving the site. The goal was to obtain a rich set of data surrounding the specific issues of serving methods and cafeteria environment.

In summary, the plan for this study was to follow these steps:

1. Identify successful high school CNPs in Georgia,
2. Select five based on region of the state and cooperation,
3. Collect school documents from each program,
4. Interview the director,
5. Interview the manager, and
6. Conduct on-site observations.

Data Analysis

Triangulation is the act of bringing more than one source of data to bear on a single point (Marshall & Rossman, 2006). The process of triangulation occurs throughout the data

gathering process and analysis. It means being redundant in seeing, hearing, analyzing, and writing (Stake, 2006). Two kinds of triangulation contributed to verification and validation in the analysis of this study: (a) examining the consistency of different data sources, and (b) using multiple researchers to review findings.

The first strategy involved triangulating data sources by comparing and cross-checking the consistency of information derived at different times and by different means. It meant comparing observational data with interview data and validating information obtained through interviews by checking program documents and other written evidence that corroborated what interview respondents reported.

The second strategy was triangulating data sources by using multiple observers as opposed to a single observer. This reduced the potential bias that comes from a single person doing all the data collection, and it provided a means to assess more directly the reliability and validity of the data obtained. When multiple observations converge, confidence in the findings increase. Conflicting perceptions, on the other hand, cause researchers to pry more deeply (Stake, 2006). The director was also asked to review the findings and react to what was described. This reduced the likelihood of falsely reporting an event.

CHAPTER 4.

RESULTS AND DISCUSSION

Overview of the Study

The purpose of this research project was to provide CNP directors with information to make knowledgeable decisions when selecting new food delivery/service systems or planning dining room renovations by addressing the following questions:

1. What methods of service are used in successful high school CNPs?
2. What are characteristics of the dining room ambiance and décor in successful high school CNPs?
3. What are the commonalities and differences in service and dining room ambiance in successful high school CNPs?
4. What are the service policies and practices in successful high school CNPs?

The research design used a case study methodology that included direct observation, interviewing, and a review of CNP records to:

- Determine the service methods of successful Georgia high school CNPs.
- Explore similarities and differences among successful Georgia high school CNPs in relation to service methods and dining environment.

The high school CNPs selected for the study were identified as "successful" by the Georgia State Department of Education, Child Nutrition Division. Five high schools in Georgia participated in the study. The high schools ranged in size from an enrollment of 698 to 2,741. The free and reduced rates were within a 22 to 49% range of student enrollment. The participation rate for students eating lunch in the NSLP ranged from a low of 64% to a high of 82%.

Prior to a site visit, each CNP Director was mailed a questionnaire to collect demographic information about the high school's NSLP. Further data were gathered through interviews with the district director and the high school manager and observation of serving methods and dining room décor. On-site data collection occurred during a 2-day site visit in each high school.

Reporting Case Studies

The reporting aspect of case studies is perhaps most important from the user perspective. It is the contact point between the user and the researcher. A well-designed research project that is not well explained to the reader will cause the research report to fall into disuse (Tellis, 1997). According to Yin (2003) reporting case studies means bringing the results and findings to closure.

In this multiple-case report I have presented extensive descriptive data about each case as a separate report, placed in Appendix E, based primarily on a description of service methods and cafeteria ambiance. The descriptive data covers both qualitative (interviews and observations) and quantitative (Department of Education reports) information about the case. Member checking is a process whereby the researcher asks one or more participants in the study to check the accuracy of the account (Creswell, 2002). Member checking has also been identified as a way of corroborating the essential facts and evidence presented in the case report (Yin, 2003). The drafts of each of these reports were reviewed by the CNP directors whose school had been the subject of the case study; the comments were invaluable in my revisions. From a methodological viewpoint, the corrections made through this process enhanced the accuracy of the case studies, hence increasing the construct validity of the study. The likelihood of falsely reporting an event was reduced.

In addition to these individual case narratives, the report contains a section covering the cross-case analysis and results. During and after writing the case reports, I compared each case for major themes. Across cases, major themes regarding dining décor and serving methods were covered in a descriptive approach. The interviews and observations were planned for an in-depth look at several areas in the operation that might contribute to the study, including the following: meal prices, labor and customer service training, point of sale system, dining area, serving area, and menu and menu planning.

Cross-Case Analysis

Case Study Sites

Parameters for selection of high schools to participate in the research study were identified to provide consistency in the data gathering process, yet allow for flexibility in size and region of the state. Because of the small sample, it was important for all high school CNPs participating in this study to be identified by the Georgia State Department of Education Child Nutrition Division as having successful programs. Selected demographic characteristics of the five schools are listed in Table 4.1. More detailed and specific information about each school is reported in Appendix E.

Schools meeting the criteria were selected from several regions of the state. One study site is a high school in the northern region, two are located on the outskirts of metropolitan Atlanta, one is in the southern area and one is in the middle of the state. The five schools range in size from an enrollment of just under 700 to one with over 2,740 students.

The free and reduced rates for the schools were set to be no higher than 50%. The selected schools had participation rates within a range of 64 to 82%. The average

Table 4.1. Selected Information on High Schools Chosen as Study Sites

Variables	School A	School B	School C	School D	School E
Geographic region of state	South	Near metro Atlanta	Near metro Atlanta	North	Central
Enrollment	2679	2177	1811	1678	698
Students eligible to receive free/reduced lunches	26%	16%	30%	43%	49%
% lunch participation	64%	72%	70%	754%	82%
Average daily participation	1485	1124	1151	1053	556
Months of operating expenses on hand	2	3	2	2	2
Other foods available on campus, such as vending	Yes	Yes	No	Yes	Yes

participation rate for high schools in Georgia is 53.7% (*Facts and Figures*, 2006). National participation figures are not available.

All five schools serve grades 9 through 12, all meals are prepared on site, and students may not leave campus for lunch. None of the schools had any major infractions noted on the most recent Coordinated Review Effort or School Meals Initiative (program reviews conducted by the state department of education). The directors had an average of 21 years' experience in child nutrition. The managers of the five schools had an average of 10 years in child nutrition.

Meal Prices

Table 4.2 lists prices charged for all meals served during the time of the site visit. All five schools were charging the maximum amount allowed for reduced price lunches. Prices

Table 4.2. School Meal Prices for 2006-2007

Categories	School A	School B	School C	School D	School E
Full-price lunch	$1.50	$1.80	$1.65	$1.75	$1.30
Reduced-price lunch	$.40	$.40	$.40	$.40	$.40
Adult price	$2.25-2.50	$2.50	$2.35	$2.40	$2.30
Increase from 2005 to 2006	Adults- $.25	Adults: $.25 Students: $.20	$.00	$.00	$.05
Increase from 2006 to 2007	$.25	$.00	$.10	$.15	$.00
Total cost/lunch	$2.18	$2.08	$2.30	$2.44	$2.21

varied in most categories from school to school. An average full-price lunch cost students at School E the least at $1.30, whereas the students in School B had to pay $1.80, which was the most for a reimbursable lunch. Prices charged to guests and adults who ate lunch at school ranged from $2.30 in School E to $2.50 in School B. Rainville (2005) reported that Southeast region lunch prices were the lowest and Midwest prices were the highest. The mean midwestern high school price for a reimbursable lunch was $1.95, which is slightly more than the study sites. The total cost of a lunch (including food, labor, and other costs) ranged from $2.08 in School B to $2.44 in School D.

Labor and Customer Service Training

The efficient and productive use of labor can have a major impact on a CNP budget. Productivity standards are a very complex issue, and there are many variables that influence the number of labor hours required by a CNP operation (Fowler, Kwon, & Bednar, 2006). Each director in this study had a unique technique for planning staffing needs. Most were

based on lunches served daily with flexibility allowed. Equipment available in the school and the utilization of processed/convenient foods rather than scratch cooking were also considered when staffing. School C allocated extra hours for labor intensive scratch cooking, and the most popular menu required last minute preparation. School D needed more labor hours to prepare substantial amounts of fresh fruits and vegetables offered on all lines.

Managers worked 8 hours a day (School C manager worked 8.5). Turnover was minimal in all schools except School D. The number of employees ranged from 9 to 22 (Table 4.3). The total number of hours worked per day (excluding the manager) ranged from 64 to 112. The number of lunches per labor hour ranged from 8.69 to 15.09, and the labor cost as a percentage of revenue ranged from a low of 27.0% to a high of 40.5%. In Georgia, labor cost per lunch averaged $.82 and labor cost as a percentage of revenue averaged 41.8% (*Facts and Figures*, 2006). All of the schools in the study were below the state average for labor cost as a percentage of revenue. All of the schools, except School C, were below the state average in labor cost per lunch.

The CNP directors in Schools A, B, C, and D offered some customer service training each year, whereas School E, because labor turnover was so low, had training only every 3 years. CNPs at all schools but E employed a training manager.

Point-of-Sale System

All five of the school sites use various brands of an automated point-of-sale system. In School A and E students used P.I.N. pads to input their own numbers. In Schools B, C, and D, students said their P.I.N.s to a cashier. In all schools, students could deposit funds into personal accounts. Cashless transactions are less time-consuming, but managers

estimated that less than 25% of the students had cashless transactions. From 20 to 45 minutes of the manager's time was spent counting money and making the deposit daily. All directors and managers were pleased with the P.O.S. software they were using and the reports generated; all consider it easy to use. School C was the only site not pleased with technology support.

Table 4.3. Labor Information

Category	School A	School B	School C	School D	School E
Labor turnover	Minimal	Minimal	Minimal	20%	Very minimal
Hours per day mgr works	8	8	8.5	8	8
Hours per day assistant manager works	8	No assistant	8	No assistant	No assistant
Number of employees manager supervises	22	13	19	14	9
Total hours of labor per day	112	74.5	103.5	85	64
# of lunches per labor hour	13.26	15.09	11.12	12.38	8.69
# of assistants cashiering	8	5	4	4	2
# of lunches per cashier	186	225	288	263	278
# of assistants serving	7	5	9	5	4
# of assistants in back of the house	7	3	6	3	3
Average labor cost per lunch	$.70	$.62	$.98	$.76	$.64
Labor cost as a % age of revenue	34.8%	27.0%	40.5%	33.2%	31.1%

Dining Area

Schools B, C, and D are older schools built to accommodate smaller enrollments. School C will be adding dining space next school year, and School D has added an addition to accommodate the increased enrollment. School A is new and spacious. The dining area is part of a multi-purpose room that includes a stage. The area can seat over 1,000 people for school events. School E is also new and well designed. Dining areas in all five of the school sites were clean. Tables were wiped between lunch periods, and any spills were attended to immediately.

High schools should provide 14 to 16 net square feet of dining space per student enrolled divided by the number of lunch periods (Bratianu & Terry, 1999, p. 547). The most crowded lunchroom was School B's, where the tables were arranged in rows. The tables were all rectangular and had a very institutional look (Figure 4.1). School A was the roomiest, with 27.3 net square feet per student. School C and D had more variety in table shapes, but still had a somewhat institutional look. School C had some booths, and these seemed popular with students as they were always full even when tables were empty (Figure 4.2). Schools A and E are newer construction, and both have multi-level floor areas. School A had round tables, and School E had both round and rectangular tables. The number of seats that must be provided during a lunch period depends on the overall student dining population divided by the number of meal periods (Maryland State Department of Education, 1996). All schools had sufficient seats to accommodate all students during each lunch period (Table 4.4). A few empty seats were always available.

Figure 4.1. Long rows of tables have a very institutional look

Figure 4.2 Example of booths in a high school cafeteria

Serving Area

All five schools had made changes to increase participation. These included changes to menu choices and serving lines based on student preferences and changes to speed up service. The directors in all five schools visited other schools in Georgia to search out ideas before making major changes. The serving lines in School A and E (the two new schools) were modern and had a built-in look (Figure 4.3). The other three schools had piece-meal serving lines. Schools C and D had expanded serving by placing serving lines in the dining room. School B had moved the cashiers into the dining area.

All schools used self-serve style of service for all items other than the entrée. One advantage of this style is that when students serve themselves, they are a part of the decision-making process, and they do not blame the foodservice staff for the selections they make (Pannell-Martin, 1999). The style also allows pre-portioning of foods.

Table 4.4. Dining Area Statistics

Dining area	School A	School B	School C	School D	School E
Total sq. ft.	18,309	5,000	5,100	6,544	4126.5
# of sq. ft. per student enrolled per lunch period	27.30 (multi-purpose room/stage)	9.00	11.25	15.58	23.60
Types of seating	Round tables with chairs; round tables with attached seats	Rectangular tables with chairs; rectangular tables with attached seats	Booths; rectangular tables with chairs; round tables with chairs	Rectangular, round, and square tables with attached seats	Rectangular and square tables with attached seats
Total # of seats	544	442	450	388	258
Theme	Sports	Sports	None— school colors	School mascot	School mascot

Figure 4.3 School A's serving lines have a built-in look with electronic menu boards

Schools C and E had no signage to describe the menu on each line. School B had a grease board outside each line designating the menu for that line. School A had electronic menu boards for all lines. School D had electronic menu boards for two lines; the other three lines had no signage.

Little interaction between servers and students was observed in any of the schools. More interaction took place once the students reached the cashiers. The point-of-sale system was automated in all schools. It appeared that cashiers in all schools were familiar with the students' names, probably because the name appeared on the computer monitor. The cashiers observed were friendly and efficient. Some cashiers made friendly comments to students.

Menu and Menu Planning

School B menus followed the NuMenu nutrient standard meal planning system, which utilizes computer software to ensure the meals meet specific nutritional standards, and the other four schools used a traditional food-based menu-planning system with the offer-versus-serve option, whereby a student must take at least three of the five offered components for the meal to qualify as a reimbursable meal. All five schools offered the self-serve type reimbursable meal and also sold extra food items. Standardized recipes were used by all sites.

All schools offered from 5 to 21 entrée choices daily (Table 4.5). Many side items were also offered. In Schools A, B, D, and, E these were very well presented and very appealing (Figure 4.4). Cullen et al. (2007) reported that many students say that they would eat fruits and vegetables if schools offered a variety and served them fresh. Schools A, D, and E served a wide variety of fresh fruits and vegetables (Figure 4.5). Students were observed selecting the fresh fruit choices.

All schools were attuned to the need for speed in serving and student preferences for menu items; menus or serving lines were adjusted accordingly. Except for School C, at least five side-item choices are offered on every line. These items were well presented, and all choices were visible to students. Items that were pre-portioned were packed in clear containers (Figure 4.6). All directors stated that they used some student input when planning menus. Schools A, C, and D conduct taste testing with students. School B students make suggestions to the CNP manager. The manager reports to the central office, and staff considers making menu changes based on the student suggestions. School E receives input

Table 4.5. Serving Area Statistics

Category	School A	School B	School C	School D	School E
Sq. ft. of serving area	5678	600	1890	1500	819
# of serving lines	8	4	7	5	4
Participation before changes in serving area	48.2%	45%	N/A	35%	N/A
Participation after changes in serving area	64.2%	72.4%	N/A	74.7%	N/A
# of entrée choices offered daily	9	7	17-21	10	5
Bundled meals	None	Sub sandwich	Salad plate; sandwich plate	None	Salad plate
Serving methods	Employees serve entrée; all sides are self serve	Employees serve entrée; all sides are self serve	Employees serve entrée; all sides are self serve	Employees serve entrée; all sides are self serve	Employees serve entrée; all sides are self serve
Side dishes	Many choices of sides, well displayed	5 sides offered from two-sided serving bar	Few sides offered	Many choices of sides, well displayed	Many choices of sides, well displayed
Time lunch begins	11:23	11:35	11:55	11:35	11:15
Time lunch ends	1:23	1:23	2:00	1:50	1:20
Average time in queue	5:18	6:25	6:17	4:19	4:21

Figure 4.4. Foods were very well presented and very appealing

Figure 4.5. Schools served a wide variety of fruits and vegetables

Figure 4.6. Pre-portioned meals were packed in clear containers

from students through the use of surveys. Because this school is in a small town, most students are familiar with the director and feel free to report menu ideas.

Three schools (A, B, and D) used all disposable service ware, School C used a combination, and School E used reusables. All schools had some problem with student theft of food items and have tried different means to curtail the theft.

In a Pennsylvania study (Probart et al., 2006), the timing of lunch was a significant predictor of lunch participation. CNP directors who indicted that their first lunchtime began at 10:30 a.m. had less participation than schools starting at 11:00 a.m. or later. In this study, the earliest starting time for the lunch period was in School E, where the first lunch began at 11:15 a.m. All lunch periods were from 25 to 30 minutes long. SNA's *Keys to Excellence*

standard is that no student should stand in line more than 10 minutes. In these successful schools, the average time students spend in line was 5:42. All managers and directors had received some complaints about long lines, and they had made many changes trying to decrease time spent in line. School A added another hot line and sandwich line. School B implemented self-serve on both sides of the serving lines. They started using menu boards so students would know what is on each line. They trained food assistants in ways to speed service. Because a salad bar slowed the line, they switched to prepackaged salads. School C added a cashier and tried different milkboxes to speed the lines. School D makes verbal suggestions to students to put money on accounts to help speed lines. School E added two lines.

CHAPTER 5.

SUMMARY AND CONCLUSIONS

This research used a multi-method case study approach that combined interviews, observations, and documentation records to collect, analyze, and interpret data in five Georgia high school that operate *successful* CNPs. Four objectives were addressed.

The first objective was to discover what methods of service are used in successful high schools. All five schools served the entrée only and students self-served side items.

The second objective was to discern the characteristics of the dining room ambiance and décor in successful high school CNPs. With the exception of the two recently built schools, dining décor was basic in these schools. The research did reveal that the schools had sufficient seats to accommodate all students during each lunch period. Except for School A the dining rooms were crowded, but a few empty seats were always available.

The third objective was to find the commonalities and differences in service and dining room ambiance in these schools. Service method was the same in all schools, but the dining room ambiance ranged from an institutional look to a multi-level, modern, and spacious food court. It was noted that all sites had an automated point-of-sale system to help provide efficient service. The directors and managers used the related software to assist in materials management, production forecasting and scheduling, service, and monitoring performance.

All schools were attuned to the need for speed in serving. To improve participation and the efficiency of the lunch service the directors had made changes to decrease the amount of time students wait in line. These included offering additional service lines so that students are able to receive their meals more quickly and using remote serving lines

throughout the dining area to provide many access points. The directors constantly strived for shorter queues so as to provide students with adequate time to eat.

In four of the schools, foods displayed on the serving lines was very well presented. Adding to the success of these schools were the presentation of the food on the serving line, temperature, food choices, and portion size flexibility. The schools offered from 5 to 21 entrée choices and several side items daily.

The last objective was to determine the service policies and practices in successful high schools. One policy that was common to all five schools was that students were not allowed to leave campus for lunch.

Standardized recipes were used to produce consistent products, acceptable to students. The manager and directors were proud of the quality of the food served. And each school prepared hot foods close to service times and continuously during service time to minimize holding. Each school used holding and serving equipment that maintains product temperature (all schools have the same brand of holding cabinet).

To design nutritionally adequate menus successfully and to develop well-accepted recipes, the directors and managers in these schools had an appreciation of foods and made sure that appropriate culinary skills and techniques were incorporated into the operation. These successful schools were attuned to student preferences for menu items. Student customers evaluated school lunches on a variety of characteristics, and the directors thought it was important to determine continually what was driving satisfaction. They used a wide variety of resources to solicit input from their students: surveys, taste testing, informal discussion, P.O.S. reports, and informal cafeteria rounds. After listening, the directors made

changes on the basis of students' opinions about variety, taste, appearance, and quality of the food and services offered.

Major Study Findings

- Students could not leave campus for lunch. Vending was available in four of the schools, but the selections were limited to snacks and beverages.
- All sites had an automated point of sales system to help provide efficient service. The directors and managers used the related software to assist in materials management, production forecasting and scheduling, service, and monitoring of performance.
- Dining and serving areas in all five of the school sites were clean.
- All schools had sufficient seats to accommodate all students during each lunch period. A few empty seats were always available.
- All schools were attuned to the need for speed in serving and had made changes to decrease the amount of time students wait in line and improve participation and the efficiency of the lunch service. These included offering additional service lines so that students were able to receive their meals more quickly; and using remote serving lines located throughout the dining area to provide many access points. They strived for shorter queues and providing students with adequate time to eat.
- All schools used self-serve style of service.
- Standardized recipes were used to consistently produce products acceptable to students.

- Food is prepared on-site in all schools. Each school prepared hot foods close to service times and continuously during service time to minimize holding, and used holding and serving equipment that maintained product temperature (all schools had the same brand of holding cabinet).
- All schools offered from 5 to 21 entrée choices and several side items daily.
- These successful schools were attuned to student preferences for menu items. They used a wide variety of resources for listening to their students: surveys, taste testing, informal discussion, P.O.S. reports, and informal cafeteria rounds. After listening, they made changes on the basis of students' concept of variety, taste, appearance, and quality of the food and services offered.
- Foods displayed on the serving lines were very well presented in four of the schools.
- The earliest starting time for lunch was 11:15 and all but one lunch period was 30 minutes long. The other school's lunch period was 25 minutes.

Limitations

Several limitations should be noted. This study was conducted in just one state with only five schools. Unlike random sample surveys, case studies are not representative of entire populations, but can be generalized to a theory based on cases selected to represent dimensions of that theory. Yin (2003, p. 15) pointed out that generalization of results, from case study designs, is made to theory and not to populations. This study was conducted and written to arrive at broad generalizations based on case study evidence.

Recommendations for Additional Research

- More research studies of successful high schools are needed to validate these results. To convince school administrators to schedule lunch after 11:00 and to have four lunch periods each day, research is recommended that demonstrates that student participation increases when lunch is served later and when seats are available in the dining room.
- The objective of remodeling in the schools in this study was to provide additional space and to speed service. Additional studies of facility remodeling, as an approach to customer service, are needed. Remodeling for enhanced image allows dismal, passé appearing facilities to become transformed into establishments that are desired by the customer.

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APPENDIX A.

INSTITUTIONAL REVIEW BOARD APPROVAL

IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY

Institutional Review Board
Office of Research Assurances
Vice Provost for Research
1138 Pearson Hall
Ames, Iowa 50011-2207
515 294-4566
FAX 515 294-4267

DATE: 5 February 2007

TO: Marie Richardson
PO Box 24322, St. Simons Island, GA 31522

CC: Dr. Mary Gregoire
31 MacKay Hall

FROM: Jan Canny, IRB Administrator
Office of Research Assurances

SUBJECT: IRB ID 07-028

The Chair of the Institutional Review Board has reviewed the project "Serving Methods and Dining Environment Currently Used in Successful High School Child Nutrition Programs in Georgia" and determined that the project does not meet the definition of human subject research according to the federal guidelines, 45 CFR 46.

Because this project does not need IRB approval, you can proceed with the project. We do, however, urge you to protect the rights of your participants in the same ways that you would if IRB approval were required. This includes providing relevant information about the project to the participants. Best practices would include in the e-mail recruitment message a statement of the voluntary nature of participation. However, this is up to your discretion.

Any modification of this project should be communicated to the IRB to determine if the project still meets the definition of not being research. If it is determined that approval is needed, then an IRB proposal will need to be submitted and approved before proceeding with data collection.

APPENDIX B.

SCHOOL PROFILE FORM

Thank you for agreeing to participate in this research study on serving methods and cafeteria ambiance in successful Georgia high school Child Nutrition Programs. Please complete this School Profile and return to me. A self-addressed, postage-paid envelope is provided.

School Name _____

School Address_____

City, zip_____

District Director_____

Telephone_____

School Manager_____

Telephone_____

School Enrollment (as of Dec., 2006)_____

Average Daily Attendance (as of Dec., 2006) _____

1. What grades are served by this school?

2. Average daily number of reimbursable lunches served to students:

Free_____ Reduced_____ Paid_____

3. Number of students approved for free meal benefits as of October 31, 2006 _____

4. Number of students approved for reduced meal benefits as of October 31, 2006_____

5. Are meals prepared: _____ on-site _____satellite system

6. The price of a reimbursable lunch _____ Reduced price_____ Adult price_____

7. Was there a price increase for the 05-06 school year, if so how much? _____

8. Was there a price increase for the 06-07 school year, if so how much?_____

10. Average number of adult meals served daily_____

11. How does your district calculate meals equivalents?

_____

12. How many meal equivalents per labor hour are produced and served in this school?

_____

13. What type point-of-sale system is used ? _____manual _____ automated (if automated list brand_____)

14. Is this a closed campus? _____ Are there any other foods available on campus during lunch, such as school stores, vending machines, or concessions? _____

15. What time does the lunch period begin?_____

16. What time is the last student to return to class? _____

17. Do you use disposables, reusable, or a combination? _____

18. What is the square footage of the dining room? _____

19. What is the square footage of the serving area? _____

20. This school serves students who are: (circle all that are appropriate)

Urban Suburban Rural Small town

21. What is the labor turnover rate and how do you calculate? _____

22. When were your last CRE and SMI? _____

23. Were any major infractions noted on the last CRE or SMI? _____

APPENDIX C.

INTERVIEW FORMS

Child Nutrition Program Director Interview Form

Date _____ School District_____
Name_____

1. How any years of experience do you have in child nutrition?

2. Please tell me about the serving area.
   a. Why did you choose this particular set-up?

   b. When did you last make changes? _____

   c. What prompted you to make the changes? _____

   d. If you have made major changes to the serving area in the last five years, how much did you spend ? _____

   e. How was it funded? _____

   f. Where did you look for ideas? _____

   g. Did you use a consultant?

3. If in the future, you want to make major changes to the menu, do you consider the current serving area flexible? _____

4. Let's talk about your menus

   a. Who plans the menus?
   b. Do you use student input?
   c. Do you use parent input?
   d. Do you use cycle menus? If so, how long is the cycle?
   e. Do you provide any portable, bundled reimbursable meal options? If so, what?

5. The next few questions are about food production policies and procedures:

    a. Do you use standardized recipes?
    b. Do you review food sales histories and if so how often?
    c. Do you utilize any leftovers?
    d. What is the upper limit you will spend for an entrée?
    e. How do you determine labor hours needed?

6. Do you offer customer service training to employees in this school? If so, describe

    _____

    a. Who conducts the Orientation for New Employees (ONE) training in your district?

    b. Who conducts other training?

7. Is it mandatory that all students remain in the cafeteria during their lunch period?

    _____

    If not, is the cafeteria the preferred meeting place for students during the lunch period?

    _____

8. Do you receive complaints about long lines?_____

9. What do you do to speed service? _____

10. Please tell me about the signage in this cafeteria.

    a. Why did you chose these particular signs?

        _____

    b. Where did you go for ideas? _____

    c. How much did you spend on signage? _____

    d. How was it funded? _____

11. When did you last renovate the dining room? _____

    a. What prompted this renovation?

    b. Where did you get your ideas?

    c. How much did you spend on remodeling?

d. How was it funded?

e. Did you use a consultant? _____

12. Describe your Point-of-Sale (POS) program.

a. Are you pleased with it?

b. Is it user friendly?

c. Does it produce the kinds of reports you need?

d. Is tech support prompt?

e. Who provides tech support?

13. In this school, what do you consider to be the major reason some students do not get a school lunch? _____

14. Why do you think this high school has such excellent participation?_____

Child Nutrition Program Manager Interview Form

Date _____ School _____
Name_____

1. How many years experience do you have in child nutrition and in what areas?

   _____

2. How long have you been at this school?

   _____

3. The next few questions are about food production procedures:

   a. Do you use standardized recipes? _____

   b. Do you experience any problems with recipes? _____

   c. If so, explain _____

   d. How do you forecast food production needs? _____

   e. How do you utilize leftovers? _____

   f. Tell me about your work/production schedules _____

   g. How do you handle menu substitutions? _____

4. How many hours do you work per day? _____
5. How many food assistants are employed in this school? _____
6. How many hours do each work? _____
7. How many cashiers do you use each day? _____
8. Describe each assistants designated assignment during the serving period? _____

   _____

9. Which of the following controls are used when serving students?

   a. Portion control? _____

b. Pre-sized utensils for serving? _____

c. Food temperatures measured and maintained? _____

10. How many serving lines do you utilize on a normal day? _____

11. How many entrée choices are on each line? _____

12. How many meal periods do you have? ____

a. How long is each period? _____

b. Are student release times staggered for each period? _____

c. Approximately how many students are in each period? _____

13. Is it mandatory that all students remain in the cafeteria during their lunch period?

_____

If not, is the cafeteria the preferred meeting place for students at lunch?

_____

14. Do you receive any complaints about long lines? _____

15. What do you do to speed service? _____

16. Who monitors student discipline in the cafeteria? _____

17. What department has the responsibility of keeping the dining area clean? _____

18. Do you think you have a problem with theft? _____

a. Describe your POS program _____

b. Is it user friendly? _____

c. What are some of the useful reports generated? _____

d. How do you use these reports to help simplify your duties?

_____

19. How many transactions do think are cashless? _____

20. How much time do you average counting money and making deposits each day?

    _____

21. What is the average participation per line per day? _____

22. Why do you think this school has such high participation? _____

23. Why do you think some students do not get a school lunch? _____

24. Please share an example of something that has made a positive impact on participation in this school? _____

25. Are a la carte offerings available? _____

    If so, are they on a separate a la carte line? _____

    Are extra food sales available on lines? ___

    If so, what items are available? _____

26. Do you have a marketing program or promotions in this school? _____

APPENDIX D.

SITE OBSERVATION FORM

School: _____
Date:_____ Time:_____

Describe dining room decor	**Description**
Walls • Colors: -Bright - Contrasting • Wall Hangings	
Window treatments • Blinds • Fabric	
Floor: • Material • Color • Pattern	
Awnings	
Banners	
Plants	
Theme	
Lighting: • Adequate • Natural Fixtures • Pendants • Fluorescent	
Comfort of temperature • Smells • Ventilated • Easily regulated	
Describe Seating	
Table shape • Round • Rectangular • Attached seats • Attached benches Booths Outdoor dining	

Stand-up	
Arrangement of tables • Long rows • Mixed	
Number of seats	
Other areas	
Visible Point of sale nutrition education • Cling-ons • Posters • Other	
Appearance of employees Uniforms • Color matched • Style matched • Consistent Type of hair restraint	
Serving Area	
Style • Straight line • Self-serve • Food court • Scramble • Counter service • Other	
Color of walls	
Does area look: • Modern • Crowded • Custom made • Cluttered	
Menu boards Adequately describe the offerings	
Portable stands or carts	
Awnings	
Banners	
Graphics	
Signage • Identifies each line	

• Colorful • Lighted • Neon • Clean (dust free) • Age appropriate • Easy to read	
List what is served on each line	
How the food is displayed • Panned • Pre-plated • Orderly • Most food choices visible to customer • Sneeze guards clean • Individual serving containers - Styrofoam - Clear	
Observations in Dining Room During Lunch Periods	

Are students allowed to sit where they chose?	
Are students well behaved?	
Are they free to socialize?	
Are there empty seats at all times?	
Does traffic flow smoothly?	
Observe at least 9 students per meal period and determine average time spent in line and average time to eat	
Noise Level • Can converse with person next to you in normal tones • Any sound absorbing material?	
Observations in serving area	
Customer service • Servers make eye contact with customer • Servers smiling • Interaction between staff/customer	
Is portion control evident?	
Are food temperatures measured and maintained • Temperature log available • Easy access to thermometer • Temperatures are recorded at scheduled intervals • Corrective actions recorded	
What was participation per line	

(compare with participation per line for the week)?	
Observe and describe POS	

APPENDIX E.

SCHOOL DESCRIPTIVE DATA REPORTS

School A

Demographic Information

School A is located in South Georgia. The school enrollment as of December 2006 was 2,679 with an average daily attendance of 2,628. Grades nine through twelve attend this school. Daily lunch participation averages 64.2% of the students in attendance. An average of 76 adults are served lunch daily. Approximately 26% of the students enrolled are eligible to receive free or reduced price meals. Meals are prepared on-site. The Director describes the students attending this school as suburban, rural, and small town students.

This is a closed campus (students cannot leave for lunch), but the principal offers vending and a school store. The school completed an SMI (School Meal Initiative) in March of 1998 and the CRE (Coordinated Review Effort) in January 2003. No major infractions were noted on either.

Meal Prices

Students eligible to receive reduced price lunches pay $.40. The cost of a lunch for full-paying students is $1.50. Employees of the school board pay $2.25 for lunch. Adults, such as parents, grandparents, or other guests visiting the school, pay $2.50 for lunch. During the 2005-2006 school year there was a price increase for adult lunches from $2.00 to $2.25. The price of lunch for a full-paying student increased $.25 at the beginning of the 2006-2007 school year. The average year-to-date total cost per lunch for this school was $2.18. The program functions with a fund balance sufficient to cover 1.52 months of operating costs.

Labor

For staffing purposes, the director calculates meal equivalents using prior year data. Student and adult lunches served daily are added to one-third of the number of breakfasts served daily. This total is divided by the total hours of all CN staff in the school, including the manager. No factoring is included for extra sales or for snacks, but summer meals are included in the meal counts. Based on figures for 2005-2006 school year, 12.31 meal equivalents are produced and served in this school per labor hour. The director strives for 14 meals per labor hour (including manager). She allows flexibility because she does not factor in extra sales, and this school stays financially sound with extra sales. Labor turnover in this school is minimal.

The manager works 8 hours per day. She supervises 22 employees. The assistant manager works 8 hours a day, ten employees work 6 hours, and eleven work 4 hours. This is 112 hours of labor per day, plus 8 hours for the manager. During the serving period, eight of these employees cashier. One employee is a runner, going from line to line, removing dirty pans to the pot and pan sink. One employee is cooking French fries and two are batch cooking. There are seven servers (one serves two lines). Two employees are cleaning pots and pans. The work schedule is very detailed. It lists each person's assignments, including time to begin preparing and the amount of food to prepare. Labor cost averaged $.70 per lunch.

Customer Service Training

Customer service training is provided to employees in this school. In-service is conducted at the beginning of the school year for all CNP employees. A customer service module is included. All new CNP employees complete the Orientation for New Employees

(ONE) training, which includes customer service. The CNP employs a training manager to conduct all training.

Point-of-Sale System

The school uses a computerized automated P.O.S. system for tracking meals and payments. The brand name is Café Terminal by Comalex. Pads are provided for students to input personal identification numbers (P.I.N.s). Identification cards can also be scanned. Students may deposit funds in their accounts or pay cash. They are allowed to charge one time. The manager estimates that about 25% of the transactions are cashless. The P.O.S. program is user friendly for the cashiers and produces reports needed by staff. The software allows the manager to track student sales by entrée and extra sales. She also receives other activity reports to aid in completing monthly reports. Tech support is prompt as one school technology staff member is assigned to the CNP. Approximately 45 minutes of the manager's time is spent counting money and making the deposit daily.

Dining Room

The cafeteria has a very attractive custom-built look. It is spacious. The dining area has 18,309 square feet, plus an additional 998 square feet in a staff dining room. The dining room will accommodate approximately 1000 people. Plenty of floor area, in addition to the tall ceilings and the abundant space between tables, gives the room a feel of freedom, unlike most cafeterias. The large space helps to control noise, making dining area a pleasant place to converse with friends. The largest area of the dining room is furnished with round tables with attached seats. It is divided into three areas with a modern multi-level floor and half-walls.

Figure E1. Dining room has multi-level floor and half walls

Seniors are allowed to sit in a special area separated from the rest of the dining area by a half-wall. Their area has round tables and unattached chairs. The unattached chairs allow students to have freedom to sit wherever they would like. This seating arrangement accommodates 544 students.

The combination of recessed fluorescent lights with natural light coming in from both sides of the room makes the room feel comfortable and warm. The atmosphere is pleasant and relaxing.

The custodial department is responsible for keeping the dining area clean. The floors, walls, and tables were all very clean. The paint looked fresh and clean. The area around the serving lines, the condiment station, and the utensil racks were clean.

The room is designed around a sports theme. The colors used in the dining room are the school colors: grey, black, and white. Wall paint, tables, and the floor tiles are all

coordinated with the theme. Award banners and other sports décor are displayed to give the room a finished, custom-made appearance.

Students must remain in the cafeteria area during the lunch period. They are allowed to sit wherever they want, but must remain in the in the cafeteria. All students seemed to be well behaved even though security was not highly visible.

Signage

The menu boards for this cafeteria were chosen by the architect to be eye-catching. Each section of the serving area is equipped with an electronic sign that is attached to the lower level of the header. The electronic sign has menu messages about each of the two lines in the section where it is mounted. The signs are easy to read, and the colors of the letters coordinate with the primary colors in the headers.

Serving Area

Background

Before the new high school was built, the serving area had two traditional serving lines. More lines were needed, so two additional serving lines were added in a classroom. The school grew from 1,000 to 2,200 students, necessitating construction of a new school. The county passed a Special Purpose Local Option Sales Tax to fund the school. The CNP director, architect, principal, and athletic director toured several schools in Georgia before designing the school. The CNP director was allowed to design the serving area. She chose a food court design with eight serving stations. A foodservice equipment consultant was also used to assist with equipment selection and design. The serving area has 5,678 square feet. Before the new school was built, student participation was 48.2%; it is now 66.8%.

Appearance

Plenty of room is allocated so that the food can be presented in an attractive and easily accessible manner. All foods are displayed in a professional manner using custom-made containers and utensils. It is obvious that the space has been designed around the menu; everything has a place. All sneeze guards, tray slides, and counter fronts are immaculately clean.

The area is divided into four sections. Each section consists of two serving lines. Multi-level headers and divider walls are used to separate sections from each other. Each part of the multi-level headers is painted a different primary color and accented with a single strip of neon in the same color. The neon makes the colors really pop out, giving the food court a commercial look.

Changes in serving areas

Some changes have been made to the serving area since the school opened in 2002. Originally the serving area had a potato bar, a salad bar, two hot lines, two pizza lines, and two sandwich lines. The hot lines were very popular, so during the summer of 2003, the salad bar and the potato bar were combined. The old potato bar became another hot line. The new hot line serves a different variety of chicken and vegetables each day.

Student preferences changed again. Participation on the pizza lines decreased, and in the summer of 2004, one of the pizza lines was changed to an additional sandwich line. In addition, a nutrient analysis indicated that selections on the pizza line did not provide sufficient calories. Another hot well was added, and with the use of half-pans, two vegetables are now being offered on the pizza line. At present this school has three sandwich lines, three hot lines, one pizza line, and a salad/potato bar.

Menu choices

The first line is a salad bar, offering fresh and canned fruits, vegetables, cottage and cheddar cheese, Jello®, puddings, three prepared salads, three different meat toppings, crackers, baked potatoes, homemade dressings, and a variety of commercially prepared packets of dressing. Students are also offered several juices and milk and a cookie for dessert. Lines two, three and four all serve the same menu. On the day of the site visit, the choices included chicken strips, pre-plated salads, macaroni and cheese, turnip greens, black-eyed peas, mixed fruit, fresh fruit, cookie, and a choice of milk. Line five serves two kinds of pizza, a breadstick, side salad, Jello® made with fruit juice, fresh fruit, and a choice of milk. Lines six, seven, and eight all have the same menu. Two sandwich choices are offered as entrees, and baked French fries, lettuce, tomato, pickles, onions, Jello®, side salad, fruit, cookie, and a choice of milk are available as side items. Extra sale items include chips, water, Gatorade®, and juice.

Serving methods

Portion control is achieved with the capacity of the utensils used for serving. An employee serves the entrée, and students self-serve side items. There is some problem with student theft. Servers were observed taking temperatures of food items on serving lines every 30 minutes; however, no record was maintained.

Student queues

The lunch period begins at 11:23. There are four periods, each lasting 30 minutes. Serving is completed at 1:23. Approximately 400 students are served each period. The school uses all disposable trays and silverware. The director receives occasional complaints about long lines. Usually these complaints come from parents at the beginning of the year

Figure E2. Easily accessible self-serve items

when students are unsure of what is on each line and may move from line to line. To reduce lines, the director stations school staff in the serving area to tell the students what is on each line. The third hot line and third sandwich line were added to speed service.

The researchers timed nine students to ascertain time spent in line. The shortest time observed was 2:23 minutes, and the longest time was 12:30 minutes. The average time was 5.18 minutes.

Menu Planning

The director plans the menus, but permits flexibility on vegetables. The manager tries different vegetables (keeping in mind texture and color) to determine which are

acceptable by students. The P.O.S. program produces reports of food sales on each line. The director studies these reports to discover which items are more popular. The director noted that the P.O.S. reports confirm the popularity of chicken; therefore, a chicken product is now available on one hot line every day. When planning menus, the director considers $.60 as her maximum cost for an entrée. Food cost per lunch averaged $1.01.

Student input is included in menu planning. During the summer, students conduct taste tests on new entrees. Parent input is not solicited for the high school menu. Cycle menus are used. The sandwich lines are on a two-week cycle, whereas hot lines operate on a four-week cycle. The salad/potato bar cycle is weekly. One popular chicken sandwich is served every day and the other chicken entrée is on a weekly cycle. No portable, bundled, reimbursable meal options are offered.

Food Production Procedures

Standardized recipes are used. The manager indicated there are sometimes problems with recipes, especially when new products are involved. Tweaking of the recipes is often needed. The staff batch cooks to minimize leftovers. History of food sales is used to forecast production needs. On the lines with cycle menus, the manager looks at P.O.S. history on previous cycles. She also checks for special events and for any student groups who are on field trips.

General Observations

With 21 years of experience in child nutrition, the director is well qualified. The manager has four years experience in CNPs. She started as a food assistant; the next year she was promoted to assistant manager and became a manager before the school year was over. This was her first year at this school.

The director believes that a desire to lose weight and a wish to save money are the major reasons some students do not participate in the school lunch program. The manager also cites picky eaters and not wanting to stand in line as reasons for students not eating. Some of the reasons the director listed for the excellent participation in this school include the following: having an excellent manager who can manage 23 employees; offering variety and choice not only in entrée but also in side items; no limits on amounts of fruits and vegetables; and foods being displayed in a eye-pleasing manner. The manager listed consistency of food, temperature of foods, and attitudes of the servers and cashiers.

School B

Demographic Information

School B is located in the metro Atlanta area. The school enrollment as of December 2006 was 2,177, with an average daily attendance of 2,037. Grades nine through twelve attend this school. Daily lunch participation averages 72.4% of the students in attendance. An average of 49 adults are served lunch daily. Approximately 16% of the students enrolled are eligible to receive free or reduced price meals. Meals are prepared on-site. The Director described the students attending this school as suburban.

This is a closed campus, but vending (snacks and carbonated beverages) is available on campus during lunch. The school completed an SMI and CRE in February 2007. No major infractions were noted. The district has 28 schools and is growing by 1900 students a year.

Meal Prices

Students eligible to receive reduced price lunches pay $.40. The cost of a lunch for full-paying students is $1.80. Employees and guests pay $2.50 for lunch. There was a $.20 price increase for paying students in the beginning of the 2005-2006 school year. The adult price increased $.25. The average year-to-date total cost per lunch for this school is $2.08. The program functions with a fund balance sufficient to cover 2.58 months of operating costs.

Labor

The director does not calculate meal equivalents. For staffing purposes, she uses a formula as follows: three breakfasts equal one lunch, four snacks equal one lunch. She then staffs at one labor hour per 16 labor calculated lunches. This high school earns 85 labor hours per day. Labor turnover in this school is minimal.

The manager works eight hours per day. She supervises 13 employees. Two employees work 6½ hours, four work 6 hours, six work 5½ hours, and one works 4½ hours per day. This is 74½ hours of labor per day, plus 8 hours for the manager. The manager's work schedule is time specific, but does not indicate amounts to prepare or recipes. There is a separate weekly cleaning schedule that is very detailed. Positions are rotated and employees cross-trained. During the serving period, five employees cashier; two are batch cooking and backing up the line; five are serving; and one employee is washing pots and pans. Labor costs averaged $.62 per lunch.

Customer Service Training

Customer service training is provided to employees in this school. In-service is conducted in January for all CNP employees. A customer service module is included. All

new CNP employees complete the Orientation for New Employees (ONE) training, which includes customer service and which is taught by the training manager.

Point-of-Sale System

The school uses a computerized automated P.O.S. system for tracking meals and payments. The brand name is WinSnap. Students state their p.i.n.s to the cashier. Students may deposit funds in their accounts or pay cash. If the student has funds on account, the transaction is much faster. The manager states that very few of the transactions are cashless. The P.O.S. program is user friendly for the cashiers and produces reports needed by staff. This software is also used for inventory, costing, and free and reduced price applications. Tech support is provided by a technology specialist on the CNP staff. Approximately 20 minutes of the manager's time is spent counting money and making the deposit daily.

Description of Dining Area

The décor of the 5,100 square-foot dining room has a sports theme. The school colors, black and grey, are used throughout the dining room. The block walls are painted a medium beige color. Enlivening the walls are two stripes, light gray over dark gray, painted around the room. The floor is a multi-colored brown vinyl composite tile that resembles the appearance of terrazzo. The floor does not add to the appearance of the room, but it appears to be easy to maintain. The custodial department is responsible for keeping the dining area clean.

Decorative awnings are above the entrance doors to the serving lines. Two awnings are solid black, and one is black with white stripes. The awnings add to the décor and make the serving area appear modern.

Two large murals depicting the school mascot are painted on opposite walls in the dining room. The black, gray, and white color scheme is integrated throughout the murals and adds to the overall ambiance of the room.

The dining room has adequate light. Recessed fluorescent lights provide the majority of the light but, some natural light enters through the side entrance doors. The natural light makes the room have a warm feel.

The seating in the dining room encourages socializing. Sixteen rectangular tables with attached seats are used to provide 192 seats. In addition, 20 rectangular tables have chairs that allow students the flexibility to congregate around tables with friends. The total seating capacity is 442.

Students are allowed to sit wherever they want in the dining room and seem to enjoy their lunch periods. The noise level was comfortable; it was easy to hear conversation at the table. All students seemed to be well behaved even though security was not highly visible. Teachers supervised as they ate their lunches at a teachers' table, but no supervisor was readily identifiable. Very few meals from home were being eaten in the dining room; most students were eating school lunches.

Serving Area

Serving lines

The original design consisted of two traditional serving lines in an enclosed area in front of the kitchen. Changes and renovations were made several years ago when participation decreased to 45%. Before making changes, the director visited other schools in Georgia for ideas; she also drew from her years of experience in other school districts. Several schools she visited were successfully using self-service concepts. She decided to

implement the concept in this high school. The only cost incurred was to convert serving lines to self-serve. A serving line manufacturer's representative assisted with conversion. Double sneeze guards were added to comply with health department standards. Participation has increased each year and is now around 72%.

The current serving area consists of four self-serve lines. The equipment used on these lines looks old and cluttered, and the colors do not match. The walls in the serving area are painted off-white. No point-of-sale or any other wall hangings are used in these areas. The servery has recessed fluorescent lights, but the low ceiling makes the area appear dim. The overall servery is not colorful or appealing.

The serving area is approximately 600 square feet, and the set up is very typical of an older school that has been renovated. Students stand in line in the dining area to enter a door into the serving line area. Once the students are served an entrée, they are allowed to self-serve all side items before exiting to the dining room, where cashiers complete the meal transaction.

The cashier stands are functional but they do not have a custom-made appearance. The napkin dispensers and utensils were sitting on portable carts in front of the cashiers, making the area look cluttered.

Menu choices

The only visible menu advertising is on grease boards attached to entrance doors to each serving line. Seven entrée choices are offered daily. Line one served French bread pepperoni pizza or hoagie sandwich with a choice of two: side salad, green beans, peach cup, fresh fruit, or juice. All students were allowed to choose one eight-ounce milk chug and a cookie. On line two, chicken fajitas on flour shells with salsa were offered as entrées,

Figure E3. Cashier area looks cluttered

with the same side items. Line three was a potato bar that featured a variety of mostly canned fruits, fresh vegetables, saltines, and pre-portioned cups of ham and cheese. Line four served ravioli casserole with a whole wheat roll. The same side items offered on lines one and two were available on this line.

Servers and cashiers

All employees were wearing matching uniforms and hair-nets. They looked clean and neat. Not much interaction was taking place between servers and students since the employee merely served the entrees. Each line had a shelf above the sneeze guard that seemed to interfere with eye contact between the servers and the students. More interaction

took place once the students reached the cashiers. The cashiers were friendly and efficient; they made friendly comments to students and appeared to be very familiar with the students, greeting them by name.

Serving methods

Portion control is achieved with the capacity of the utensils used for serving. An employee serves the entrée, and students self-serve the side items. There is some problem with student theft as the serving line backs up near the cashiers. Students eat while waiting to pay or sometimes put extra items in their jackets. To deter theft, staff have stopped pre-wrapping food items. If students are caught taking food, staff make them call their mothers. Employees were observed taking temperatures of food items; however, no record was maintained.

Student queues

The lunch period begins at 11:35. There are four periods, each lasting 25 minutes. Serving is completed at 1:23. Approximately 280 students are served each period. The director and manager receive some complaints about long lines. To reduce the lines, self-serve is allowed on both sides of the serving lines and menu boards have been installed so that students know what is available on each line. In addition, prepackaged salads have replaced the salad bar, which slowed the line because there were so many different items form which to choose. To speed service, cashiers encourage students to have monies readily available and to know their P.I.N.S.

The researchers timed nine students to ascertain time spent in line. The shortest time observed was 5:12 minutes and the longest time was 7:53 minutes. The average time was 6:25 minutes.

Menu Planning

The training manager plans the menus, and the director critiques. The district CNP uses a nutrient-based menu planning system. Menus are planned around specific nutrient goals, therefore, computerized nutrient analysis is an important step in planning menus. Once a menu passes this analysis, it is sent to the schools for a three week trial. After this trial period, managers meet and discuss what the students liked and disliked. The menus are tweaked, removing some items and adding new items. It is a continuous, ongoing process. The high school menus are on a one-week cycle but can be changed using this process, if needed.

The director reviews histories of food sales once a month. If fewer than 50 of any entrée are served in a day, that item is discussed for possible removal from the menu. When planning menus, the director considers $.55 as her maximum cost for an entrée, although she does serve chicken strips weekly, at $.80 a serving, because it is a very popular item. Food cost per lunch averages $1.09.

Student input is included in menu planning. The managers encourage students to comment on foods served, and managers include those comments in the menu planning process. Parent input is not solicited for the high school menu. A one-week cycle is used, but because of the variety of choices and the number of serving lines, students could go 18 days without repeating an entrée. Salads and a hoagie plate (sandwich, lettuce, tomato, and pickle) are served as portable, bundled reimbursable meals. These are located in a glass front reach-in cooler to allow for speedier service.

This school allows extra sales after a reimbursable meal. Some of the items offered are bottled water, tea, ice cream, chocolate, lemonade or juice chugs, and extra food items from the line.

Food Production Procedures

Standardized recipes are used. If a manager experiences any problems with recipes, she e-mails office to report problems, and the training manager revisits that recipe. The one-week cycle simplifies forecasting production needs.

General Observations

With 30 years of experience in child nutrition, the director is well qualified. The manager has 13 years experience in CNPs. She started as a food assistant and worked three years. She has been manager at this school for 10 years. The director and manager agree that there are four primary reasons students do not purchase a school lunch: 1) they wish to save money, 2) they do not want to stand in line, 3) they are dieting, 4) they find it easier or speedier to purchase from vending. The CNP director attributes the excellent participation in this school to three factors: good food, friendly staff who makes the students feel comfortable, and the variety of food choices. The manager noted the same strengths but added two other points. She noted that the food choices are items the students enjoy and that students like the staff's listening and responding to their suggestions.

School C

Demographic Information

School C is located in the metro Atlanta area. The school enrollment as of December 2006 was 1,811 with an average daily attendance of 1,647. Grades nine through twelve attend this school. Daily lunch participation averages 69.9% of the students in attendance. An average of 103 adults are served lunch daily. Approximately 30% of the students enrolled are eligible to receive free or reduced price meals. Meals are prepared on-site. The Director described the students attending this school as suburban, rural, and small town students.

Price Charged for Meals

Students eligible to receive reduced price lunches pay $.40. The cost of a lunch for full-paying students is $1.65. Employees and guests pay $2.35 for lunch. At the beginning of the 2006-2007 school year, there was a price increase of $.10 for student and adult lunches. The average year-to-date total cost per lunch for this school is $2.30. The program functions with a fund balance sufficient to cover 1.5 months of operating costs.

Labor

The director does not calculate meal equivalents. For staffing purposes, he uses a formula as follows: for every 12 reimbursable meals served, one labor hour is earned, and for every 40 reimbursable breakfast served, one labor hour is earned. This high school is given 3.5 hours a day for supplemental sales. Labor turnover in this school is minimal.

The manager works 8 ½ hours per day. She supervises 19 employees. The assistant manager works 8 hours per day. Two employees work 7 ½ hours, four work 6 hours, three work 5 ½ hours, seven work 5 hours, and two work 2 ½ hours per day. This is 103 ½ hours

of labor per day, plus 8 ½ hours for the manager. There is no formal work schedule. During the serving period, four of these employees cashier. Four employees are frying chicken and French fries, batch cooking, and backing up the line. There are nine servers. Two employees are in the dish room. Labor cost per lunch averages $.98 per lunch.

Training

Customer service training is provided to employees in this school. In-service is conducted at the beginning of the school year for all CNP employees. A customer service module is included. All new CNP employees complete the Orientation for New Employees (ONE) training, which includes customer service, taught by managers from neighboring counties. Beginning this year, the CNP is employing a training manager to conduct all training.

Point-of-Sale System

The school uses a computerized automated P.O.S. for tracking meals and payments. The brand name is Creative Logic. Students state their personal I.D. numbers (P.I.N.s) to the cashier. The cashier can also scan a student's I.D. card, and if the student has funds on account, the transaction is much faster. Students may keep funds on deposit in their accounts or pay cash. The manager states that very few of the transactions are cashless. Students are not allowed to charge. The P.O.S. program is user friendly for the cashier and produces several reports needed by staff. This software is also used for inventory, costing, and free and reduced applications. Tech support is provided on-line, but is often difficult to download due to firewalls. Approximately 20 minutes of the manager's time is spent counting money and making the deposit daily.

Description of Dining Area

The dining room décor at School C incorporates the school colors of red, black, and gray. The facility is obviously a renovated food court, not new construction. The design is very typical of a renovated high school cafeteria facility (institutional-looking, limited décor, and serving lines expanding into the dining area). The dining area has 5,100 square feet, with projected enrollment for next school year rising to 1955, an addition to the dining area and more seating will be added this summer.

Enlivening the walls at chair-rail height are three stripes representing the school colors-one red, one black, and one gray. The colors are bright, and they add to the overall ambiance of the room.

The overall appearance of the floor in the dining room is dull and somewhat outdated. The floor is divided into two sections. The largest portion of the floor was a multi-colored brown terrazzo that was obviously the original floor installed before the food court renovation. During the renovation, additional seating was created in the rear of the room. The lack of transition from the old terrazzo to the multi-colored brown vinyl composite tile used as flooring in the new area creates a perception that the seating was an afterthought.

The wall nearest the serving line is dressed with a large one-piece awning made of red, white, and black vinyl with an aluminum frame. This decorative awning extends the entire length of the serving area. The colors add to the overall school-color theme of the dining room, and the awning helps support the food court concept. No other banners or awnings are being used in the dining room.

Figure E4. Awning helps support food court concept

The seating is appropriate for a high-school setting. Six and eight seat booths are arranged around the outside of the room. A total of 18 booths yielded 138 seats. Twelve traditional rectangle tables with 12 chairs per table were used to yield another 144 seats. Twenty-eight round tables with 6 chairs arranged around each yielded 168 seats for a total dining capacity of 450 seats. Students must remain in the cafeteria area or in the courtyard outside the cafeteria during the lunch period.

The room is adequately illuminated with recessed fluorescent lights that were properly spaced and in working order. No natural light is available.

Students seem to enjoy their lunch. They are allowed to sit wherever they want in the dining room. The noise level was comfortable; it was easy to hear conversations at the table. All students seemed to be well behaved even though security was not highly visible. Teachers supervised as they ate their lunches. No supervisor was readily identifiable.

Serving Area

Serving lines

The original design consisted of three traditional serving lines in an enclosed area in front of the kitchen. Changes and renovations have been ongoing because of increasing enrollment and student demand for certain foods. If changes had not been made, students would have stood in line longer and participation probably would have fallen. The director consulted with managers, visited other schools, and drew from his years in foodservice management when making these changes. The serving area now has seven lines; four of the lines and all of the cashiers are in the dining room. The only cost incurred was the cost of one serving line; the other three were transferred from other schools in the district. The serving lines are very flexible, probably because of no extra signage. Because of the absence of signage identifying lines as "The Roost" or "Pizza, the director can change menus or move lines without the need to replace signage. The serving area is approximately 1890 square feet.

Menu choices

The school is approved for offer versus serve. From 17 to 21 entrée choices are offered daily. Two lines in the enclosed area served fried chicken tenders with French fries, homemade yeast rolls, and self-serve salad cups, fruit, pickles, calcium-fortified juice, and a variety of milk. The chicken was a very high quality whole muscle product that was

purchased at a very low price as seconds. Minimal salad and fruit offerings were not presented in an appealing manner. The attraction of these lines was the large portions, the quality of the chicken, and the combination of chicken with French fries. This was the most popular menu and was repeated daily.

The third line in this enclosed area was the home-cooked line, a full-serve line with a 10-day cycle menu. The menu on the day of the site visit was chicken stir-fry, egg roll, rice, corn on the cob, fruit, roll, milk and juice. This was not a very popular line. The fruit was self-serve, and it was not very appealing (Figure E5). The other items were covered with lids, preventing students from seeing what was offered.

Figure E5. Side items were not displayed in an appealing manner

Outside of the enclosed area, in the dining room there were four lines that were added during the renovation. One of the lines was a sandwich line. Choices included cheeseburger, a grilled chicken sandwich, or a pretzel with cheese sauce, each served with pickles, chips, French fries, lettuce and tomato, fruit, juice, and a choice of milk. The line did not appear to match any of the other serving equipment. It was functional but did not add to the overall appeal of the dining room décor.

The second of the four serving lines located in the dining room was a taco line. This line offered a choice of taco meat or chicken with peppers served with hard or soft taco shells, lettuce, tomato, cheese, peppers, refried beans, salsa, Spanish rice, juice, and a choice of milk. The serving equipment on this line was functional but did not appear to be purchased especially for the renovation. It did not add to the décor.

In addition to the two outside lines previously mentioned, a large two-door glass-front refrigerator held pre-packaged salads and sandwiches (the salad plates have replaced a salad bar. The variety of salads offered on this line was impressive. The choices were: fruit, tuna, Southwestern, chef, and vegetable salads in one door of the refrigerator. The other side of the refrigerator was used to store pre-made sandwich plates. The choices were: peanut butter and jelly, ham and cheese, or turkey on white bread, whole wheat bread, sub roll, or wrap. All choices were served with fruit, chips, juice, and a choice of milk. A food service assistant stood beside the refrigerator and handed out the meals as the students made their selections. Students then proceeded to a self-serve bar with homemade dressings or large packets of premium dressing and other toppings for the salads and subs before exiting to the cashier. All of the offerings looked very fresh and appealing.

The final line in the dining room was the pizza line. It appeared to be a piece of used equipment moved in to help accommodate the addition of lines during the renovation. It did not add to the décor. The menu on this line included French bread pizza, stuffed crust pizza, Mexican pizza, or cheese sticks with sauce, each served with self-serve salad, fruit, juice, and milk.

Students were allowed to select extra-sale beverages out of a large two-door refrigerator. A food assistant took cash for the beverages, which could be purchased only by students with reimbursable meals.

Servers and cashiers

All servers and cashiers were pleasant, however, I did not observe any employee putting forth extra effort to talk with students other than to ask what they would like to eat. The servers on the sandwich , pizza, and taco lines had time to converse with students. The chicken lines were extremely busy, so the servers had to move quickly. However all students were getting the same menu, which made it unnecessary to ask questions about service. The home-cooked line had such poor participation that a server walked over to serve only when she saw someone standing in front of the line.

All cashiers were located in the dining room separate from the serving lines. The scatter system allowed all seven lines to filter into four cashier stations. Long lines were not visible in this area. The only delay of any significance occurred among students waiting to be served in the two chicken lines.

Serving methods

Portion control is achieved with the capacity of utensils used for serving. An employee serves the entrée, but side items other than French fries are self serve. There is

some problem with student theft, but this school has no extra sales, which decreases theft. Employees were observed taking temperatures of food items; however, no record was maintained.

Student queues

The director receives occasional complaints about long lines from administrators while the manager rarely receives complaints. To speed the lines, the director added another cashier, put in a wireless drop, and tried different milk boxes. To speed service is one of the reasons there are two chicken lines and two servers on each of the two lines. Because the chicken lines are so popular they have two servers on each of these two lines. If one of the lines backs up, additional employees can be added to reduce the wait time.

The researchers timed nine students to ascertain time spent in line. The shortest time observed was 5:51 minutes, and the longest time was 7:12 minutes. The average time was 6:17 minutes.

Menu Planning

The CNP Coordinator meets once a month with managers to plan menus. The high school menus are very broad because of the number of entrées offered each day. The managers have a great deal of discretion. When planning menus, the director considers $.55 as his maximum cost for an entrée. The most popular item is a whole-muscle chicken product that he purchases as seconds at a very reasonable price, stores in the district's central warehouse freezer, and delivers to the schools as needed. Food cost per lunch averaged $.76.

Student input is included in menu planning. The superintendent of schools meets with a student forum twice each school year. The director is invited to talk with the students

about CNP issues. Students also taste food samples and complete survey forms related to preferences. Parent input is not solicited for the high school menu. On most lines, the same entrees are available every day.

Food Production Procedures

Standardized recipes are used. The managers of the five high schools in the county meet by telephone conference calls to discuss any problems with recipes, products, or production procedures. If one school has a problem with a recipe, the group can discuss and tweak the recipe until it works for all. History of food sales, available from the P.O.S. software, is used to forecast production needs.

General Observations

The director is well qualified as he has been a CN director for eight years. He was a director in a school district in Indiana for five years, and has been in current position for three years. He was with the Georgia State Department of Education, Child Nutrition Division for five years. He also taught hotel and restaurant management at a university for 16 years. The manager had 13 years experience in CNPs. She worked as a food assistant three years. She has been manager at this school for 10 years.

Both the director and the manager have clearly conceived notions of what makes School C's program successful. The director and manager agree that a desire to save money and not wanting to stand in line are the major reasons some students do not purchase a school lunch. The manager also cites picky eaters as a reason for students not eating. Two reasons the director listed for the excellent participation in this school include offering variety and choices in foods, and providing customer service that emphasizes friendliness of staff and making students feel comfortable. The manager listed similar reasons: the food is

good; the staff is friendly; the menu choices include foods the students enjoy; and the staff listen and respond to student's suggestions.

School D

Demographic Information

School D is located in North Georgia. The school enrollment as of December 2006 was 1,822 with an average daily attendance of 1,489. Grades nine through twelve attend this school. Daily lunch participation averages 73.2% of the students in attendance. An average of 105 adults are served lunch daily. The Director described the students attending this school as rural students. Approximately 37% of the students enrolled are eligible to receive free or reduced price meals. The last CRE and SMI for this school was completed in November 2006. No major infractions were noted. Meals are prepared on-site.

This is a closed campus. Vending machines, which are stocked with snacks and carbonated beverages, are available on campus and in the cafeteria during lunch. Profits for these machines are deposited in the principal's school account.

Lunch Prices

Students eligible to receive reduced price lunches paid $.40. The cost of a lunch for full-paying students is $1.75. Employees and guests pay $2.40 for lunch. At the beginning of the 2006-2007 school year, there was a price increase of $.15 for student and adult lunches. The average year-to-date total cost per lunch for this school is $2.44. The program functions with a fund balance sufficient to cover 2.07 months operating cost.

Labor

The director staffs this school at 14.5 meals per labor hour. On the surface that appears somewhat low, but this school serves labor intensive items such as, cut fresh fruits and vegetables and fresh baked rolls. Labor turnover in this school is approximately 20%.

The manager works eight hours per day. She supervises 14 employees. Two employees work 7½ hours, four work 6½ hours, four work 4 hours, and four work 7 hours per day. This is 85 total hours of labor per day, plus 8 hours for the manager. Each employee is given a weekly work schedule. The schedule is very detailed, including amount to prepare, scheduled completion time, recipe to use, and position during serving. A weekly cleaning schedule is also posted. During the serving period, four employees cashier; two employees are batch cooking, and backing up the line; one employee is stationed at the salad bar, restocking and keeping it clean; and two employees leave before lunch begins. Labor cost averaged $.76 per lunch.

All servers and cashiers were pleasant. They were dressed in color coordinated uniforms and looked very neat.

Customer Service Training

Customer service training is provided to employees in this school. In-service is conducted at the beginning of the school year for all CNP employees. A customer service module is included. All new CNP employees complete the Orientation for New Employees (ONE) training, which includes customer service and is taught by the training manager. All mangers in the district are studying a customer service oriented book. At monthly manger meetings they discuss different points and features of the book. These are then shared with CNP employees in the schools.

Point-of-Sale System

The school uses a computerized automated P.O.S. system for tracking meals and payments. The brand name is Keck and Woods. Students state their p.i.n.s to the cashier. Students may deposit funds in their account or pay cash. If the student has funds on account, the transaction is much faster. The manager states that very few of the transactions are cashless. Students are not allowed to charge. The P.O.S. program is very easy to learn and produces reports needed by staff. This software is also used for costing, inventory, meal management records, ordering, and free and reduced applications. Tech support is prompt and is provided by staff of the CNP department. Approximately 30 minutes is spent counting money and making the deposit daily. This is assigned to the head cashier.

Description of Dining Area

The dining room décor at School D revolves around a school mascot theme, which is the Bruins (a type of bear). An addition to the dining area has been added. The design is very typical of a renovated high school cafeteria facility (institutional-looking, with long rows of tables, limited décor, and serving area expanding into the dining area). The square footage of the dining area is 12,759.

The walls in the dining room are off white. One side wall has a very large mural depicting the school mascot. This is the focal point of the room. The staff and student body are very proud of the mural and it is used for the background when taking student body pictures, such as prom and other school groups. Over two of the doors leading to the inside serving area murals are painted to resemble awnings.

The floor in the dining room is gray, white, and gold colored vinyl composite tile. The overall appearance of the floor was bright and shiny.

Figure E5. Mural depicting school mascot is focal point of room

With long rows of tables, the seating looks institutional. Forty traditional rectangle tables with six attached seats per table create 240 seats. Sixteen round tables with eight attached seats yield another 128 seats, and five square tables with four attached seats yield another 20 seats for a total dining capacity of 388 seats. There were empty seats at all times. Students must remain in the cafeteria during the lunch period. The custodial department has the responsibility of keeping the dining area floors swept and mopped, the CNP staff cleans the table tops.

The room is adequately illuminated with recessed fluorescent lights, which are properly spaced in a drop ceiling, and in working order. One end of the room is glass and allows for natural light. There are no window treatments. The room has a light, airy, and cheerful feel. Pleasant food odors were detected.

Students are allowed to sit wherever they want in the dining room and free to socialize. There are no sound absorbing materials, and the dining room was somewhat noisy, but it was not difficult to hear the person sitting next to you. All students seemed to be well behaved even though security was not highly visible. Teachers supervised as they ate their lunches at a teacher's table. Very few meals from home were being eaten in the dining room

Serving Area

Serving lines

The original design consisted of two traditional serving lines in an enclosed area in front of the kitchen. Changes and renovations have been an ongoing process because of increasing enrollment and decreasing participation (as low as 35%). Changes were needed so students would not have to stand in long lines. The director and principal also felt that traffic flow would be better if some of the lines were in the dining area. The director consulted with a food equipment manufacture's representative, and visited several other renovated Georgia high schools, when making these changes. The school now has five lines. The only cost incurred was the cost of two new serving lines, and one used serving line. One serving line was transferred from another school in the district. The total cost incurred for adding four more lines was approximately $20,000. The two new serving lines are very flexible. Lines are straight-lines and except for the entrée are self- serve. Three of the lines are in the dining room. The serving area is approximately 1500 square feet. Each line serves an average of 250 lunches per day; the salad bar is an exception as it averages serving 100.

Menu choices

Ten entrée choices are offered daily. On all the lines a server puts the entree on the tray and the student self-serves the other items. One line in the enclosed area in the front of

the kitchen is named “Country Fare.” This menu is on a two-week cycle. On the day of the site visit, baked chicken and meatloaf were the entrée choices. Vegetables offered were turnip greens, mashed potatoes and pinto beans. Cornbread and a variety of milk was also offered along with a wide variety of fresh fruit. The presentation of the foods on all the serving lines was very appealing. with a combination of fruits to enhance colors, and positioning of food choices to show variety. Many choices of fresh fruits, both whole and cut up were offered on all lines.

The second line in this enclosed area is the “International” line, with a five day cycle menu. The menu on the day of the site visit was chicken quesadilla or tacos, rice, corn on the cob, assorted fruit, and milk.

Figure E6. Choices of whole and cut up fresh fruits offered on all lines

Immediately outside of the enclosed area, in the dining room a salad bar was added during the renovation. A cashier stand was at the end of the salad bar. One cashier handled the transactions from the salad bar and the Country Fare line. Another cashier is stationed in the dining room to handle the transactions of the international line. To make for better traffic flow, two more lines are located on the other side of the dining room. These are the newly purchased lines and are modern, color-coordinated, and have rounded black and white awnings over the tops. One of the lines is a sandwich line. Three sandwich choices are offered each day and is on a weekly cycle. The menu on the day of the site visit consisted of a choice of cheeseburger, grilled chicken sandwich, or a ham with cheese sandwich. All sandwiches are served with choices of: pickles, lettuce and tomato, six varieties of fresh

Figure E7. Salad bar with rounded awning

fruit, fruit compote, fruit salad, olives, bell pepper, jalapeño peppers, carrots, celery, cherry tomatoes, sliced onions, sliced tomatoes, curly leaf lettuce, Cole slaw, and three varieties of milk. Chips are offered as an extra sale item. A one-section cooler and a one-section warmer are located nearby to replenish the line.

The third line located in the dining room was pizza. The menu on this line is a personal pan pizza. The pizzas are served in a box and have a commercial appearance. This menu is served with raw vegetable sticks, whole fruit choice, and milk.

The two used serving lines that had been added were different colors. The milk boxes were large, bulky, and unattractive. The two serving lines located away from the kitchen area were purchased new and they had a more modern appearance.

Signage

Menus are hand-written and posted on the lines that were added in the dining room. Scrolling L.E.D. signs are used to disclose the menus on the other lines.

Serving methods

Portion control is achieved with the capacity of the utensils used for serving. The school uses disposable trays and silverware. A server serves the entrée, but side items are self serve. Long half size pans are used for side items, all food choices were visible to customers, sneeze guards were clean, and individual serving containers were clear. The lines were orderly. There is some problem with student theft. Employees were observed taking temperatures of food items, however; no record was maintained.

Student queues

The director receives occasional complaints about long lines; the manager rarely receives complaints. As it takes time to make change, students paying by the day with large

bills, slow the lines. The cashiers have been instructed to make verbal suggestions to students asking them to deposit monies in their accounts. The self-serve concept was implemented to speed lines.

The lunch period begins at 11:35. There are four periods and each last 30 minutes. Serving is completed by 1:50. Approximately 265 students are in each period. The researchers timed nine students to ascertain time spent in line. The shortest time observed was 1:01 minutes and the longest time was 6:25 minutes. The average time was 4:19 minutes. The longest queue was observed at the taco line. This may have been due to the many toppings offered with tacos.

Menu Planning

The CNP Director, high school managers, and training managers plan the menus. The high school menus are very broad, because of the number of entrées offered each day. When planning menus, the director considers $.65 as the maximum limit for an entrée. Food cost per lunch averaged $1.06.

Students and others in the school community are encouraged to suggest favorite foods and menus. Students are involved in taste-testing new foods, and menu selection. A two week cycle menu is used.

Food Production Procedures

Standardized recipes are used. If employees in a school have a problem with a recipe, they tweak the recipe, and submit to district office. Other schools in the district test the new recipe and if revisions are called for, they are implemented. The entire district's CNP staff is committed to having quality recipes which leads to quality foods. History of food sales, available from the P.O.S. software, is used to forecast production needs.

General Observations

With 12 years of experience in child nutrition, the director is well qualified. She was a director in another district in Georgia for four years and has been in current position for eight years. The manager had 6 years experience in CNPs. She started as a cashier, became a head cashier, and after six months became a manager. All six years have been at this school.

The director thinks that long lines and the availability of vending machines are reasons some students do not purchase a school lunch. The manager thinks it is because many of the students leave school for work/study programs and eat off campus. Some of the reasons the director listed for the excellent participation in this school: offering variety and choices, and quality of food. The elementary and middle schools in this district have good CNPs, therefore, the students are used to eating school meals and they continue eating in high school because they have expectations of the quality that will be offered. The manager listed similar reasons: the food is good, the staff friendly, many choices, and they have added additional lines.

School E

Demographic Information

School E is located in a small town near the middle of the state. The school enrollment as of December 2006 was 716, with an average daily attendance of 696. Grades nine through twelve attend this school. Daily lunch participation averages 81.1% of the students in attendance. An average of 28 adults are served lunch daily. Approximately 49% of the students enrolled are eligible to receive free or reduced-price meals. Meals are

prepared on-site. The Director described the students attending this school as rural, small-town students.

This is a closed campus and no other foods are available on campus during lunch. The school completed an SMI and CRE in March 2007. No major infractions were noted on either.

Meal Prices

Students eligible to receive reduced price lunches pay $.40. The cost of a lunch for full-paying students is $1.30. Employees and guests pay $2.30 for lunch. At the beginning of the 2005-2006 school year, there was a price increase of $.05 for both student and adult lunches. The average year-to-date total cost per lunch for this school is $2.21. The program functions with a fund balance sufficient to cover 1.7 months of operating costs.

Labor

The director does not calculate meal equivalents. For staffing purposes, she uses a simple calculation of the number of meals served divided by the number of labor hours. The goal is to serve eight to ten meals per labor hour. This is a low number for the base, but hours are not added for the number of choices available to students or for extra food sales. Labor turnover in this school is very minimal. It averages less than one person per year.

The manager works eight hours per day. She supervises 9 employees. Seven employees work 8 hours per day. Two employees work 4 hours per day. This totals 64 hours of labor per day, plus 8 hours for the manager. During the serving period, two employees cashier. One employee is batch cooking and backing up the line. There are four servers, and one employee is in the dish room. Another employee pours and serves tea and lemonade. Labor cost averages $.64 per lunch.

All employees dress in matching uniforms. White smocks and blue pants were the colors on the day of the site visit. Employees also wear matching slip-resistant shoes. The staff appear to be neat and professional.

The manager prepares a work schedule daily. It lists all items to prepare, but does not list quantities or specific times to prepare food items. Cleaning chores are not listed on the work schedule.

Customer Service Training

Customer service training is provided to employees in this school during in-service that is conducted every three years, in cooperation with two other small systems. All new CNP employees complete the Orientation for New Employees (ONE) training, which includes customer service and which has been taught by managers and the director. The district often hires only one person a year.

Point-of-Sale System

The school uses a computerized automated P.O.S. system for tracking meals and payments. The brand name is Creative Logic. Pads are provided for students to input their P.I.N.s. If students do not know their P.I.N.s the cashier can look them up, but doing so, slows the line. Students may deposit funds in their accounts or pay cash. If the student has funds on account, the transaction is much faster. The manager states that very few of the transactions are cashless.

The P.O.S. program is user friendly for the cashiers and produces reports needed by staff. This software is also used for menu management and free and reduced-price applications. The director's husband is the district director of technology, which ensures that

tech support is prompt and that a programmer is available. Approximately 30 minutes of the manager's time is spent counting money and making the deposit daily.

Description of Dining Area

Streams of light enter through the open design of the windows and through the double doors on one side. Full-length windows on two sides of the room allow students to see into the hallways. The recessed fluorescent lights are barely needed. The outside windows and the hallway windows are small modern-looking squares of glass. The school mascot is the Royals, and the cafeteria is decorated using a "Royals" theme. Beautiful full-wall murals depict the rich purple, blue, and green school colors. Attractive cream-colored soundboards are placed around the room near the ceiling to help control noise.

Figure E8. Full-wall murals add to décor

The majority of the tables in the cafeteria are rectangular with attached seats. A few tables are round with attached seating. A total of 258 seats is available for students. Colors used for the tables and stools coordinate with the rest of the room. Students were very well behaved even though they are able to sit wherever they want in the dining room. The custodial department has the responsibility of keeping the dining area clean.

Serving Area

The use of space in the serving area is unique. Doors from the hallway open for students to enter the serving lines. The line actually forms in the hallway. No serving area space is used for staging. Once the students enter the serving area, they are able to pick up a plate and choose their entrée, which is served to them. The side items are self-serve.

No signage is used to describe the menus on each of the four lines. Three lines serve a choice of fried chicken, spicy chicken filet sandwich, or plain chicken filet sandwich; with each choice, students receive three side items. French fries, mashed potatoes, cabbage, roll, fruit cup, fresh fruit, and salad cups were offered as side items. Fortified juice or milk is offered on all lines as beverage choices. Line four offers pizza and pre-plated salads with fruit and vegetable side items. Sub sandwiches are served as portable, bundled reimbursable meals. All students were offered a pudding pop for dessert. Students are allowed to purchase iced tea as an extra item.

The serving lines were clean and well organized. All food pans were placed in the wells. Space was available to offer a large variety of choices. The fronts of all counters are ceramic tile, which not only has a commercial appearance, but is also very easy to keep clean. Green, blue, and white decorative banners hang from the ceiling above each serving line.

Figure E9. Fresh and canned fruits are offered on all lines

Figure E10. Decorative banners are over serving area

Very little point-of-sale information is available. “Got milk?” posters were the only point-of-sale nutrition-education materials or visible signs, yet students seem to know what is offered and how much they are allowed to take.

Serving methods

Portion control is achieved with the capacity of the utensils used for serving. An employee serves the entrée, but side items are self-serve. There is some problem with student theft. The school uses reusable trays and silverware.

Student queues

The first lunch period begins at 11:10. There are four periods, each lasting 30 minutes. Serving is completed at 1:20. The lunch periods are uneven. The first and last periods have approximately 200 students, and the two middle lunch periods serve approximately 75 each. The director does not receive complaints about long lines, though the manager receives some complaints. To speed the lines, the manager has added two lines, and every entrée is offered on all lines, with the exception of salad plates and pizza.

The researchers timed nine students to ascertain time spent in line. The shortest time observed was 2:30 minutes, and the longest time was 6:12 minutes. The average time was 4:21 minutes.

Menu Planning

The CNP Director plans menus. When planning menus, the director considers $.80 as her maximum cost for an entrée. Food cost per lunch averages $1.00. Cycle menus are not used.

Student input is solicited as part of the menu planning process. The director talks to students about CNP issues. They also taste food samples and complete survey forms related to preferences. She has an open policy for parental input.

Food Production Procedures

Standardized recipes are used for most menu items. History of food sales, available from the P.O.S. software, is used to forecast production needs.

General Observations

The director is well qualified, with 16 years of experience in child nutrition. The manager has 13 years of experience in CNPs. She started as a cashier and worked nine years in that position. She has been high school manager for four years. The director believes that food quality and personnel issues (poor customer service skills) are major reasons some students do not purchase a school lunch. The manager also cites a wish to save money as a reason for students not eating. The director indicated that since the students have no breaks during which to buy snacks, they are hungry at lunch, and this is one reason for the excellent participation in this school. The manager listed good food and friendly staff as the chief reasons for the high participation in the program.